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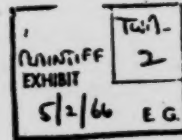
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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

----- x
TRANS WORLD AIRLINES, INC., :
Plaintiff, :
-against- :
HOWARD R. HUGHES, HUGHES TOOL COMPANY :
and RAYMOND M. HOLLIDAY, :
Defendants. :
----- x



STATEMENT OF
ROBERT WILAND RUMMEL

61 Civ. 2324

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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

----- X

TRANS WORLD AIRLINES, INC.,	:	
	:	
Plaintiff,	:	
	:	STATEMENT OF
-against-	:	<u>ROBERT WILAND RUMMEL</u>
	:	
HOWARD R. HUGHES, HUGHES TOOL COMPANY	:	61 Civ. 2324
and RAYMOND M. HOLLIDAY,	:	
	:	
Defendants.	:	
	:	
----- X		

Robert Wiland Rummel, Vice President, Planning and Research, Trans World Airlines, Inc. ("TWA"), respectfully states as follows:

QUALIFICATIONS

I was born in Dakota, Illinois, on August 4, 1915, and graduated from Curtiss-Wright Technical Institute, Glendale, California, in 1936. I am a member of the Aerospace Council of the Society of Automotive Engineers and an Associate Fellow of the American Institute of Aeronautics and Astronautics. I have participated in technical activities of the Air Transport Association since 1942 and in technical activities of the International Air Transport Association since 1949. I am a member of the National Aeronautics and Space Administration Research Advisory Committee on Aircraft Operating Problems.

In 1935, I served as Stress Analyst for the Hughes Aircraft Company in Burbank, California, and performed the stress analysis of the landing gear, wing skin and other

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(Statement of Robert W. Rummel)

aspects of the Hughes ~~biplane~~, the aircraft with which Howard Hughes established the world's land plane speed record in 1935. Thereafter, I undertook a special research study of the efficiency of fuselage structures at the Curtiss-Wright Technical Institute.

In 1936, I assisted in the development of the Model 12 transport as a stress analyst for Lockheed Aircraft Corporation.

After the Lockheed project was completed, I was employed by Aero Engineering Corporation, Long Beach, California, as a detail designer and draftsman and assisted in the development of an all-metal commercial airplane.

After the Aero project was completed, I laid out basic designs for the fuselage, wing panels, center section and tail surfaces of a proposed United States Army trainer to be produced by National Aircraft Company of Alhambra, California.

Beginning in October 1937, I was employed by Rearwin Airplanes, Kansas City, Kansas, and designed two new series of aircraft, seven distinct models of which were certificated by the CAA and produced in quantity by the company. I also designed and was responsible for developing substantial improvements in aircraft models which had been produced previously. I was in charge of engineering, flight testing, aircraft inspection and installation of new facilities. In addition to serving Rearwin as Chief Engineer, I also served as Chief Engineer of the Ken Royce Engine Co. after its acquisition by Rearwin in 1938. As such, I redesigned two aircraft engine models. These were used by Rearwin and four other aircraft manufacturers. In 1941, I was elected to the Board of Directors of the successor of the two Rearwin

companies, Rearwin Aircraft and Engines, which I continued to serve as Chief Engineer. This company was succeeded by the Commonwealth Aircraft Corporation which I served as Chief Research Engineer.

On June 21, 1943, I joined TWA as Senior Engineer in charge of new aircraft studies and future fleet planning. I became Chief Engineer of TWA on August 10, 1949 and held that position until March 24, 1956, when I was elected Vice President, Engineering.

In 1958, I became Chairman of the TWA Jet Planning Committee and served in this capacity as well as Vice President, Engineering. The Jet Planning Committee was composed of vice presidents and major department heads and was responsible for planning for the introduction and efficient use of jet aircraft by TWA.

On April 27, 1959, I was elected to my present position of Vice President, Planning and Research.

From 1956 through 1960, when I was serving as Vice President, Engineering, and later Vice President, Planning and Research, of TWA, I was also employed by the Hughes Tool Company ("Toolco") as a consultant and special representative in connection with the acquisition of jet aircraft from the Boeing Company and General Dynamics Corporation (Convair Division) and the acquisition of jet engines from the Pratt & Whitney Aircraft Corporation and the General Electric Company. As Toolco's special representative during that period, I reported directly to Howard Hughes. I had authority to commit funds under Toolco's contracts, and the Toolco factory representatives at Boeing and Convair reported to me as

special representative Toolco responsible for the technical administration of the Toolco contracts with such manufacturers.

Although my title has changed from time to time, my primary duty during most of the period of my employment by TWA has been to recommend what size and what type fleets to procure for TWA. I and members of my department consulted extensively with those departments of TWA which would either use or be affected by the procurement of the aircraft, and I consulted extensively with Mr. Hughes personally during the period from 1954 until 1961.

Since 1943, I have been actively engaged in all of TWA's major aircraft procurement programs and have been intimately concerned both with aircraft actually acquired through Toolco and also with aircraft which TWA considered for procurement, including the aircraft listed in Annex A. My activities included negotiations with aircraft manufacturers with respect to technical specifications, performance characteristics, provisioning and spare parts, delivery schedules, acceptance tests and other matters.

EARLY JET DEVELOPMENTS

As part of our responsibility for planning and research activities in connection with the acquisition of new aircraft for TWA, I and members of my department kept in close contact with manufacturers of aircraft and engines in order to keep abreast of significant new developments in the commercial aviation field. As early as 1946, I was aware of the probability that in due course jet transports would be feasible for commercial purposes. In this connection, I investigated numerous designs for commercial jet transports throughout the post-war years.

In 1951, I completed a report to John A. Collings, Vice President, Operations, of TWA with respect to TWA's equipment position vis-a-vis our major competitors. This was followed by reports in 1952 and 1953 that evaluated progress being made in turbine-powered transport developments. Copies of those reports are attached as Annex B(1)-B(4). A substantial portion of those reports was devoted to important developments in the field of jet transports and their potential impact upon TWA and the commercial aviation industry. At that time, British manufacturers were significantly further advanced in the commercial turbo-jet aircraft field than were United States manufacturers because of the early American emphasis on using jet aircraft strictly for military purposes. I stated in my reports, however, that United States developments would eventually surpass the British programs when sufficient interest was aroused here to provide financial support for American research and development in the commercial jet aviation field.

Those early reports also contained a detailed discussion of the operational aspects of turbine-powered aircraft and developments in power plants for turbo-prop and turbo-jet aircraft. I concluded that TWA should by-pass the British manufactured DeHavilland Comet and await the availability of United States jet equipment.

Subsequent to my reports, TWA continued its strong interest in jet air frame and engine developments. My staff and I continued to follow developments by all United States manufacturers and were particularly interested in the rapid progress being made by the Boeing Company.

By early 1954, Boeing was promoting its basic 707 designs and was very interested in developing airline interest

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(Statement of Robert W. Rummel)

*Spelling
substantiated*

in its jet transport proposals. Boeing supplied TWA with the latest performance data derived from the use of a prototype 707 which was first flown during the summer of 1954. This contact was made through me ^Q because my department was responsible for reviewing manufacturers' proposals for various jet designs and also because of my known association with Mr. Hughes. [At about the same time, Boeing was also discussing its jet aircraft with Pan American World Airways, Inc., and probably other carriers as well.]

We engaged in numerous discussions with Boeing representatives throughout 1954 and thereafter. Among those participating in the negotiations in addition to myself were Mr. Hughes and numerous TWA employees, including Mr. Ralph Damon, then TWA President, and numerous Boeing employees.

In 1955, TWA and Toolco recognized that in order for TWA to maintain its competitive position, it would require a fleet of jet-powered aircraft substantially as soon as its principal competitors and that orders for such equipment should not be delayed. In the fall of 1955, the development of jet aircraft reached the point at which TWA should have made definite commitments for a fleet of medium to long range jet aircraft which would be sufficient to meet TWA's initial needs for its domestic and international routes. I recommended to Mr. Hughes at that time that TWA should place orders for jet aircraft so that it would have the aircraft available at or before the time its competitors did.

In addition to such aircraft as the Boeing 707 then under consideration, it was then appropriate for TWA to contemplate the need for aircraft of somewhat smaller size and perhaps shorter range. However, in the fall of 1955, the Convair 880

jet aircraft had not yet been developed and TWA was not aware that it would ultimately acquire that particular aircraft. (TWA also did not at that time foresee that it would acquire in 1957 and 1958 four Lockheed 1049H piston aircraft and four Lockheed 1649A aircraft.)

One of my responsibilities as Vice President of Engineering of TWA was to keep TWA's senior management currently informed with respect to the number and types of aircraft ordered by TWA's principal competitors, the anticipated delivery dates for such aircraft and the anticipated effect of such acquisitions upon TWA's competitive position. By the fall of 1955, various air carriers had submitted firm orders for the acquisition of medium to long range jet aircraft and the anticipated effect upon TWA's competitive position made it important for TWA to do likewise. A list of aircraft ordered by TWA's competitors on or before December 9, 1955 was transmitted to Mr. Collings, Mr. Damon and others, including representatives of Toolco, on or about that date and a copy is attached as Annex C. That list shows that by December 9, 1955, various air carriers had placed the following firm orders for a total of 186 jet aircraft, including 95 Douglas and 59 Boeing jet aircraft:

<u>Airline</u>	<u>Manufacturer and Type</u>	<u>Quantity</u>
Pan American	Douglas DC-8	25
Pan American	Boeing 707	20
United	Douglas DC-8	30
National	Douglas DC-8	6
Eastern	Douglas DC-8	26
BOAC	Comet IV	20
American	Boeing 707	30
Braniff	Boeing 707	5
Air France	Caravelle	12
KLM	Douglas DC-8	8
Continental	Boeing 707	4

ORDERS FOR JET AIRCRAFT PLACED BY HUGHES TOOL COMPANY

In 1956 and 1957, Toolco entered into agreements providing for the purchase by Toolco of a fleet of 63 jet aircraft: 15 Boeing 707-131 jet aircraft, 18 Boeing 707-331 jet aircraft, and 30 Convair 880 jet aircraft.

These agreements were as follows:

(1) Purchase of 15 Boeing 707-131 jet aircraft.

On March 2, 1956, Hughes Tool Company, by F. W. Ayers, and Boeing Airplane Co., by J. B. Connelly, entered into a contract known as Agreement No. 7. (1) That contract originally provided for the purchase by Toolco of 8 Boeing 707-131 jet aircraft. The number of 707-131 jet aircraft to be purchased was increased to 9 (Supplemental Agreement No. 1, dated March 19, 1956), and then to 12 (Supplemental Agreement No. 2, dated September 28, 1956), and finally to 15 jet aircraft (Supplemental Agreement No. 3, dated January 10, 1957). The Boeing 707-131 jet aircraft (which has a shorter effective range than the 707-331 jet aircraft) was part of the Boeing 707-120 Series and was suitable for use on TWA's domestic routes.

(2) Purchase of 18 Boeing 707-331 jet aircraft.

On March 19, 1956, Toolco, by C. H. Price, and Boeing, by J. B. Connelly, entered into a contract known as Agreement No. 9, which provided for the purchase by Toolco of 18 Boeing 707-331 jet aircraft. (2) The

-
- (1) Plaintiff TWA's Exhibit No. R-1.
(2) Plaintiff TWA's Exhibit No. R-2.

Boeing 707-331 jet aircraft was part of the Boeing 707-320 Series and was suitable for use on TWA's international routes.

(3) Purchase of 30 Convair 880 jet aircraft.

By agreements dated June 7, 1956 and September 10, 1956, Toolco, by Raymond Holliday, and General Dynamics Corporation (Convair), by J. V. Naish, entered into a contract providing for the purchase by Toolco of 30 Convair Model 880 (22) jet aircraft.(1)

TWA did not receive this 63-plane fleet. On March 5, 1959, I was informed by Leonard Schwartz and Raymond Cook of Toolco that the number of jet aircraft TWA was to receive had been reduced. TWA ultimately received the 15 Boeing 707-131 jet aircraft ordered by Toolco. However, it received only 12 Boeing 707-331 jet aircraft, not 18; the remaining 6 Boeing 707-331 jet aircraft were diverted to Pan American and were not replaced until 5 Boeing 707-331B jet aircraft were leased in 1962-1963. It would not have been necessary for TWA to lease these aircraft if it had received the 6 Boeing 707-331 jet aircraft diverted to Pan American. Instead of 30 Convair 880 jet aircraft, TWA received only 20. The remaining 10 Convair 880 jet aircraft were disposed of as follows: 6 aircraft, 3 of which had been previously assigned by Toolco to TWA, were delivered to Northeast Airlines through an arrangement between Toolco and Convair entered into in November 1960 and were ultimately

(1) Plaintiff TWA's Exhibit Nos. R-3 and R-4.

TWA Ex. 2, page 10 of 25
(Statement of Robert W. Rummel)

acquired by TWA from Convair in 1963; 4 aircraft were retained by Toolco and are currently being operated by Northeast Airlines under lease or other arrangement with Toolco.(1)

By the end of 1960, TWA's jet fleet totaled only 28 aircraft, not 63. That 28-plane fleet was grossly inadequate for TWA's needs. Moreover, even if all 47 jet aircraft ultimately received by TWA from Toolco had been received by TWA by the end of 1960, TWA's jet fleet would not have been adequate to meet TWA's needs at that time. In my opinion, the 63-plane fleet, in the numbers and types ordered by Toolco, had it been ordered and delivered on a timely basis, would have been adequate to meet the needs of TWA for jet aircraft through 1960.

BOEING 707 - REALLOCATION OF DELIVERY DATES TO
REFLECT EQUALIZATION OF DELIVERY POSITIONS AMONG
TWA, PAN AMERICAN AND AMERICAN

If orders for jet aircraft for TWA had been placed at least as early as TWA's competitors placed their orders, the initial order would have been placed in about October 1955. In order to meet TWA's initial domestic and international needs, 15 Boeing 707-131 jet aircraft and 18 Boeing 707-331 aircraft should have been ordered at that time.

The study which is attached as Annex D shows the effect which such timely placement of orders would have had in accelerating deliveries of jet aircraft to TWA if TWA had received equal treatment with Pan American and American Airlines, its major competitors, in accordance with prevailing practices in the

(1) Plaintiff TWA's Exhibit Nos. R-5, R-6 and R-7.

industry and the specific procedures followed by the Boeing Company. The reallocation referred to in the study has been prepared on the basis of the following assumptions, each of which reflects prevailing industry practices and Boeing's production and sales policies as I know them to have been during the period under consideration:

(1) Pan American, American and TWA ordered Boeing 707 jet aircraft in the quantities actually ordered in 1955 and 1956 by Pan American, American and Hughes Tool Company, respectively, and TWA ordered at about the same time as Pan American and American.

(2) Pan American, TWA and American all sought as early delivery positions as Boeing would provide.

(3) Pan American obtained the first three delivery positions of the 120 Series, such aircraft to be used in the Boeing certification program.

(4) Boeing's deliveries to American of the 120 Series would have reflected Boeing's efforts at least to equalize early delivery positions as between TWA and American.

(5) TWA obtained the first three delivery positions of the 320 (330) Series, such aircraft to be used in the Boeing certification program.

(6) Boeing would have delivered the remaining aircraft of the 320 (330) Series on a basis which would have provided Pan American and TWA with substantially equivalent numbers of 320 (330) aircraft by the end of

the first six months after the delivery of the first aircraft to TWA, with deliveries to Pan American and TWA made on a substantially equivalent basis per month.

The reallocation of delivery dates of Boeing 707-320 (330) Series jet aircraft has been prepared on the further assumption that if Pan American had not received the 6 Boeing 707-331 jet aircraft ordered by Toolco, the earliest delivery dates for six 707-320 jet aircraft which Pan American could have obtained from Boeing upon ordering 6 such jet aircraft in July 1959 (the date of its arrangements with Toolco for delivery of such 6 aircraft) would have been the dates indicated in a letter addressed by Boeing to me dated July 27, 1959, which reflects my determination of the best delivery schedule obtainable from Boeing at such time. A copy of this letter is attached as Annex E.

For purposes of the study, actual delivery dates of aircraft are taken from FAA Registration Certificates⁽¹⁾ and the "ready for delivery" dates for 2 Boeing 707-331 jet aircraft actually delivered to TWA on April 1 and April 5, 1960 are taken from Boeing invoices.⁽²⁾

My conclusion is that if TWA had ordered its Boeing jet aircraft at about the time Pan American and American did so, TWA would have received 15 Boeing 707-131 and 18 Boeing 707-331 jet aircraft in accordance with the following schedules:

-
- (1) Plaintiff TWA's Exhibit No. R-8.
 - (2) Plaintiff TWA's Exhibit No. R-9.

REALLOCATED DATES OF DELIVERY TO TWA OF
15 BOEING 707-131 JET AIRCRAFT

November 30, 1958	May 10, 1959
December 31, 1958	May 13, 1959
January 31, 1959	May 24, 1959
February 27, 1959	May 28, 1959
March 30, 1959	June 13, 1959
April 3, 1959	June 29, 1959
April 18, 1959	July 10, 1959
	July 27, 1959

REALLOCATED DATES OF DELIVERY TO TWA OF
18 BOEING 707-331 JET AIRCRAFT

July 19, 1959	December 30, 1959
August 22, 1959	January 18, 1960
August 28, 1959	February 29, 1960
September 22, 1959	March 23, 1960
October 6, 1959	April 26, 1960
October 27, 1959	April 29, 1960
November 5, 1959	May 9, 1960
November 10, 1959	June 8, 1960
December 15, 1959	July 1, 1960

CONVAIR 880 - ACCELERATION OF SCHEDULED SERVICE TO
REFLECT TIMELY DELIVERIES OF 30 AIRCRAFT TO TWA

In 1954, 1955 and 1956, I participated in discussions and negotiations between Howard Hughes and Convair which preceded Convair's agreement to proceed with a development program for a somewhat shorter range jet aircraft ultimately designated as Convair's Model 880 (22). Convair was unwilling to undertake the program until it had firm commitments for the purchase of 40 aircraft.

TWA Ex. 2, page 14 of 25
(Statement of Robert W. Rummel)

On June 7, 1956, Toolco entered into an agreement with General Dynamics Corporation (Convair) for the purchase of 30 Convair Model 880 (22) jet aircraft.⁽¹⁾ The agreement contemplated that an additional 10 such jet aircraft would be purchased by Delta. It was my opinion then and it is still my opinion that all 30 Convair 880 jet aircraft ordered by Toolco were required by TWA in order to supplement the 15 Boeing 707-131 jet aircraft and 18 Boeing 707-331 jet aircraft previously ordered by Toolco and to meet TWA's needs for jet aircraft through 1960.

Article 2 of the Toolco-Convair agreement provided for deliveries of all 40 aircraft on the following schedule:

<u>Month of Delivery</u>	<u>Number of Aircraft</u>
November 1959	1
December	1
January 1960	2
February	2
March	3
April	4
May	4
June	5
July	6
August	6
September	6

This delivery schedule was incorporated by reference in Article 2 of the subsequent purchase agreement of September 10, 1956 between Toolco and Convair.⁽²⁾ The allocation of deliveries between Toolco and Delta was subject to an agreement between Toolco and Delta which was to be incorporated in the Toolco and Delta purchase contracts with Convair.

The allocation of deliveries between Toolco and Delta was the subject of discussions and correspondence among

(1) Plaintiff TWA's Exhibit No. R-3.

(2) Plaintiff TWA's Exhibit No. R-4.

Convair, Toolco and Delta for an extended period following the execution of the purchase contracts. In the fall of 1958, the production of Convair 880 jet aircraft reached a point at which it became essential to allocate particular aircraft between Toolco and Delta so that aircraft would proceed through the production line in the sequence in which they were to be delivered. At that time, Convair allocated deliveries between Toolco and Delta.

On November 18, 1958, Delta confirmed the Convair allocation and executed "Amendment No. 3" to its purchase agreement with Convair.⁽¹⁾ This Amendment provided for delivery schedules to Delta as follows:

DELTA DELIVERIES
As Per Amendment No. 3
November 18, 1958

<u>Month of Delivery</u>	<u>Number of Aircraft</u>
January 1960	1
February	0
March	1
April	1
May	1
June	1
July	1
August	1
September	3
	<u>10</u>

At approximately the same time, Convair informed Toolco that Convair was proceeding with production of the 30 aircraft ordered by Toolco on the basis of a delivery schedule complementary to the Delta schedule. I actively participated in the preparations made by Toolco and TWA for the receipt and utilization of these aircraft. Such preparations were based upon the following schedule:

(1) Plaintiff TWA's Exhibit No. R-10.

SCHEDULED DELIVERIES OF CONVAIR 880
AIRCRAFT TO TOOLCO AND TWA

<u>Month of Delivery</u>	<u>Number of Aircraft</u>
November 1959	1
December	1
January 1960	1
February	1
March	2
April	2
May	3
June	3
July	4
August	5
September	5
	30

This schedule appears in a document entitled "Hughes Tool Company Airplane Program Delivery Schedule", dated November 18, 1958⁽¹⁾ (the same date that Delta executed its own delivery schedule)⁽²⁾ and in TWA Jet Plans and Premises - Aircraft Availability - Convair 880 Delivery - March 24, 1959.⁽³⁾

The delivery schedules of both Delta and Toolco, dated November 18, 1958⁽⁴⁾ are completely consistent with the delivery schedule for 40 aircraft contained in the Toolco-Convair agreement of June 7, 1956, as shown in the following table:

<u>Month of Delivery</u>	<u>June 7, 1956 Contract</u>	<u>Toolco Schedule Nov. 18, 1958</u>	<u>Delta Am. No. 3 Nov. 18, 1958</u>
November 1959	1	1	0
December	1	1	0
January 1960	2	1	0
February	2	1	1
March	3	2	0
April	4	2	1
May	4	3	1
June	5	4	1
July	6	5	1
August	6	5	1
September	6	5	1
	40	30	10

- (1) Plaintiff TWA's Exhibit No. R-11.
- (2) Plaintiff TWA's Exhibit No. R-10.
- (3) Plaintiff TWA's Exhibit No. R-12.
- (4) Plaintiff TWA's Exhibits Nos. R-10 and R-11.

TWA's plans for the integration of Convair 880 jet aircraft were made by jet planning groups under my supervision. With the knowledge of Toolco, these plans had, since the purchase contract was executed in 1956, been premised on the assumption that all 30 aircraft on order by Toolco would be assigned to TWA pursuant to the terms of the Toolco-Convair contract.⁽¹⁾

After March 5, 1959, when I was informed by Leonard Schwartz and Raymond Cook of Toolco that TWA would receive only 20 of the 30 Convair 880 jet aircraft on order by Toolco, TWA's planning estimates were revised to reflect the reduction from 30 to 20.⁽²⁾ Deliveries of the 30 aircraft were allocated between Toolco and TWA on the basis of the following schedule, which is set forth in "Hughes Tool Company Airplane Program Delivery Schedule", dated September 4, 1959:⁽³⁾

<u>Month of Delivery</u>	<u>TWA</u>	<u>Toolco</u>
November 1959	1	0
December	0	1
January 1960	1	0
February	1	1
March	2	0
April	2	1
May	2	1
June	2	2
July	4	1
August	3	2
September	2	1
	<u>20</u>	<u>10</u>

The foregoing delivery schedule is consistent with the original contract delivery dates set forth in the Toolco-Convair agreement of June 7, 1956.⁽⁴⁾ The following table reflects a composite delivery schedule for the 40 aircraft ordered by Toolco and Delta:

-
- (1) Plaintiff TWA's Exhibit No. R-3, Art. 6; Plaintiff TWA's Exhibit No. R-4, Art. 16.
 - (2) Plaintiff TWA's Exhibit No. R-13.
 - (3) Plaintiff TWA's Exhibit No. R-14.
 - (4) Plaintiff TWA's Exhibit No. R-3.

TWA Ex. 2, page 18 of 25
(Statement of Robert W. Rummel)

<u>Month of Delivery</u>	<u>TWA</u>	<u>Toolco</u>	<u>Delta</u>	<u>Contracts</u>
November 1959	1	0	0	1
December	0	1	0	1
January 1960	1	0	1	2
February	1	1	0	2
March	2	0	1	3
April	2	1	1	4
May	2	1	1	4
June	2	2	1	5
July	4	1	1	6
August	3	2	1	6
September	2	1	3	6
	20	10	10	40

The Toolco-Convair contract provided for FAA certification of the Convair 880 jet aircraft no later than May 1, 1960.⁽¹⁾ TWA planning, based upon such a certification date, envisioned the commencement of scheduled operations in May 1960.⁽²⁾ Early in 1959, however, TWA believed that Convair would be able to complete certification requirements in February 1960. TWA planning estimates reflected a planning date for start of service of March 15, 1960, based upon the anticipated February 1960 certification date⁽³⁾ and deliveries of 20 aircraft to TWA in accordance with the table set forth above.

Convair did not meet the February certification date, but did fulfill its contractual commitments with regard to certification by completing the requirements on May 1, 1960.⁽⁴⁾

TWA received only one Convair 880 jet aircraft in all of 1960.⁽⁵⁾ On December 30, 1960, Toolco finally assigned

-
- (1) Plaintiff TWA's Exhibit No. R-4, Art. 2(b).
 - (2) Plaintiff TWA's Exhibit No. R-15.
 - (3) Plaintiff TWA's Exhibit No. R-16.
 - (4) Plaintiff TWA's Exhibit No. R-17.
 - (5) Plaintiff TWA's Exhibit No. R-18.

to TWA rights with respect to 19 Convair 880 jet aircraft. Within the next few days, Convair commenced deliveries to TWA and in January 1961, TWA commenced scheduled service utilizing these aircraft.

The following table lists the actual delivery dates of 36 Convair 880 jet aircraft in the order in which these aircraft were actually delivered to Delta, TWA and Northeast as shown in official FAA documents:⁽¹⁾

DELIVERIES OF CONVAIR 880 JET AIRCRAFT

<u>Date of Delivery</u>	<u>Delivered to</u>
January 31, 1960	Delta
May 4, 1960	Delta
May 6, 1960	Delta
May 18, 1960	TWA
June 2, 1960	Delta
July 4, 1960	Delta
August 4, 1960	Delta
October 1, 1960	Delta
October 23, 1960	Delta
November 21, 1960	Delta
November 30, 1960	Northeast
December 5, 1960	Northeast
December 8, 1960	Northeast
December 12, 1960	Delta
December 14, 1960	Northeast
January 1, 1961	TWA
January 5, 1961	TWA
January 6, 1961	TWA
January 8, 1961	TWA

(1) Plaintiff TWA's Exhibits Nos. R-7, R-18 and R-19.

TWA Ex. 2, page 20 of 25
(Statement of Robert W. Rummel)

<u>Date of Delivery</u>	<u>Delivered to</u>
January 12, 1961	TWA
January 21, 1961	TWA
January 21, 1961	Northeast
January 30, 1961	Northeast
February 2, 1961	TWA
February 15, 1961	TWA
March 15, 1961	TWA
March 18, 1961	TWA
March 20, 1961	TWA
April 26, 1961	TWA
May 6, 1961	TWA
May 25, 1961	TWA
June 9, 1961	TWA
July 9, 1961	TWA
August 10, 1961	TWA
September 2, 1961	TWA
October 13, 1961	TWA

The 6 aircraft delivered to Northeast Airlines, as indicated in the foregoing table, were originally ordered by Toolco and delivered to Northeast Airlines pursuant to an agreement between Toolco and Convair dated November 10, 1960 and an agreement between Convair and Northeast Airlines dated November 17, 1960. (1) Subsequently, these 6 aircraft were repossessed by Convair and sold to TWA. Two of these aircraft were delivered to TWA in July 1963, one in August 1963 and three in September 1963. (2)

(1) Plaintiff TWA's Exhibit Nos. R-6 and R-7.

(2) Plaintiff TWA's Exhibit Nos. R-6, R-7 and R-20.

The tables below compare the contract delivery dates for both Delta and TWA with the dates upon which delivery was actually made. The monthly delay is calculated for each airline and the results shown.

DELIVERIES OF CONVAIR 880 JET AIRCRAFT TO DELTA

<u>Contract</u>	<u>Actual</u>	<u>Mo. Delay</u>
January 1960	January 1960	0
March 1960	May 1960	2
April 1960	May 1960	1
May 1960	June 1960	1
June 1960	July 1960	1
July 1960	August 1960	1
August 1960	October 1960	2
September 1960	October 1960	1
September 1960	November 1960	2
September 1960	December 1960	3

Delay 14 months for 10 aircraft or average delay of 1.4 months per aircraft.

DELIVERIES OF CONVAIR 880 JET AIRCRAFT TO TWA

Twenty-Plane Fleet

<u>Scheduled</u>	<u>Actual</u>	<u>Mo. Delay</u>
November 1959	May 1960	6
January 1960	January 1961	12
February 1960	January 1961	11
March 1960	January 1961	10
March 1960	January 1961	10
April 1960	January 1961	9
April 1960	January 1961	9
May 1960	February 1961	9
May 1960	February 1961	9
June 1960	March 1961	9
June 1960	March 1961	9
July 1960	March 1961	8
July 1960	April 1961	9
July 1960	May 1961	10
July 1960	May 1961	10
August 1960	June 1961	10
August 1960	July 1961	11
August 1960	August 1961	12
September 1960	September 1961	12
September 1960	October 1961	13

Delay 198 months for 20 aircraft or average delay of 9.9 months per aircraft.

TWA Ex. 2, page 22 of 25
(Statement of Robert W. Rummel)

As the purchaser of the Convair 880 jet aircraft, Toolco assumed responsibility for all matters pertaining to deliveries of the aircraft and I was instructed by Toolco that no TWA employee was to become involved in such matters. If TWA, rather than Toolco, had been the purchaser of the Convair 880 jet aircraft, it is my opinion that Convair would have made deliveries of the planes in advance of the dates upon which deliveries actually occurred and that TWA's overall delivery experience would have closely approximated that of Delta. It is my further opinion that TWA would have commenced scheduled service with its Convair 880 fleet at least as early as May 15, 1960 and would have accepted deliveries of aircraft in advance of this date for the purpose of training of flight and ground personnel in the belief that Convair would better its actual certification date of May 1, 1960.

In addition, if TWA, rather than Toolco, had been the purchaser of the Convair 880 jet aircraft, it is my opinion that by the end of 1960, TWA's fleet would have consisted of all 30 Convair 880 aircraft instead of the 20 aircraft referred to in the previous table. The reduction of the size of this fleet was effected by Toolco over my opposition. I have consistently maintained that TWA required all 30 aircraft to fulfill its needs through 1960.

PISTON AIRCRAFT - ACCELERATION OF TWA'S
RETIREMENT PROGRAM

Earlier deliveries of Boeing jet aircraft and Convair jet aircraft would have enabled TWA to retire much of its

outmoded piston equipment far earlier than it was actually able to do so and at least as early as TWA's competitors did so. When TWA's jet aircraft were actually delivered, TWA moved quickly to dispose of its obsolescent piston aircraft and it is my opinion that TWA would have done so on the same basis if deliveries of jet aircraft to TWA had come earlier.

I have reconstructed the dates on which TWA would have retired its piston equipment if deliveries of Boeing jet aircraft had been made on the reallocated dates of delivery to TWA of 15 Boeing 707-131 jet aircraft and 18 Boeing 707-331 jet aircraft, set forth at page 13 above, and if deliveries of 30 Convair 880 jet aircraft had been made to TWA on the dates shown in the Toolco Schedule of November 18, 1958⁽¹⁾ referred to on page 16 above. In making the reconstruction, I have followed the same procedure which TWA followed in retiring piston aircraft on the basis of actual deliveries of jet aircraft. An illustration of the method used in computing the reconstructed piston retirement dates is as follows:

The actual retirement date of 4 Martin 202A piston aircraft is December 31, 1958 and is timed to the actual delivery of a Boeing 707-131 jet aircraft on January 29, 1959. The timely delivery date for that Boeing jet is November 30, 1958 or a gain of 60 days over the actual schedule. The 60-day gain is then applied to the actual retirement date of the 4 Martins, giving a reconstructed retirement date for the 4 Martin aircraft of November 1, 1958.

(1) Plaintiff TWA's Exhibit No. R-11.

TWA Ex. 2, page 24 of 25
(Statement of Robert W. Rummel)

For purposes of this reconstruction, the dates of actual deliveries of jet aircraft are taken from official FAA Registration Certificates. (1) The dates of actual retirement of piston aircraft are the dates on which TWA considered the aircraft sold and are taken from reports by TWA to the Civil Aeronautics Board on Form 41, Schedule B-8, attached as annexes to the report of R. Dixon-Speas. (2)

The reconstruction of retirement dates of piston aircraft has been made on the basis of a 63-jet plane fleet (the full fleet ordered by Toolco). A total of 103 piston aircraft which were actually retired in connection with the receipt by TWA of its first 63 jet aircraft are used in the calculations. I have calculated reconstructed retirement dates for each of these aircraft using the method outlined above. My calculations are set forth in the chart attached as Annex F.

/s/ Robert Wiland Rummel
Robert Wiland Rummel

- (1) Plaintiff TWA's Exhibit Nos. R-8, R-18 and R-21.
- (2) Plaintiff TWA's Exhibit No. S-1.

VERIFICATION

STATE OF NEW YORK)
 : ss.:
COUNTY OF NEW YORK)

Robert Wiland Rummel, being duly sworn, deposes and says that he has read the foregoing statement and Annexes A through F referred to therein, and knows the contents thereof and that the same are true as stated.

/s/ Robert Wiland Rummel
Robert Wiland Rummel

Subscribed and sworn to before
me this 25th day of April, 1966.

/s/ Katherine H. W. Swift
Notary Public

Katherine H. W. Swift
Notary Public, State of New York
No. 31-9268000
Qualified in New York County
Commission Expires March 30, 1968

[Notarial Seal]

List of Aircraft

Avro

Avroliner

Boeing

B-377

131, 331, 720B, 131B, 331B and 727 jet

Bristol

Britannia

Convair

YB-60, 110, 240, 340 and C-99
880 jet

DeHavilland

Comet jets

Douglas

DC-4, DC-6, DC-6B, DC-7, DC-7B and DC-7C
DC-8 jet

Lockheed

Constellation Models 049, 649, 749, 749A, 1049A,
1049G, 1049H and 1649A
Electra
Hercules

Martin

202, 202A, 303 and 404

Northrop

Trimotor
B-35 Flying Wing

Republic

Rainbow

Sud Aviation

Caravelle jet

Vickers

Vanguard

COPY

CHRONOLOGICAL

Mr. John A. Collings
200 Airport
Kansas City, Missouri

R. W. Rummel
206 Airport
Kansas City, Mo.
Dec. 9, 1955

Messrs.
R. S. Damon
J. W. Allen
E. O. Coche
H. D. Fellows
G. Gilmore
A. V. Leslie
W. L. Pierson
R. Quinlivan

Current and Aircraft on Order

Reference: Letter, R. W. Rummel to J. A. Collings,
May 11, 1955, same subject

We are providing herewith as attachment "A" a list of current and aircraft on order by our main competitive airlines, which revises and supersedes our previous listing transmitted by the reference letter. Attachment "B", which provides a comprehensive list of current and aircraft on order of all the airlines of the world, has also been revised and supersedes the previous issue.

There is another listing preceding attachments "A" and "B" which will be of considerable interest, as it provides a ready reference "box score" of turbine powered aircraft purchases as of this date, and also includes other possible purchases.

Changes in attachments "A" and "B" reflect equipment received and to the best of our knowledge, the latest information on anticipated deliveries.

/s/ R. W. Rummel

R. W. Rummel

JHB:LB

Attachments

(CC: Messrs. N. Dietrich, and Ray Cook - 12/19)

✓ Copy to C. Denis
5-2461

051324

HTC ROMAINE

TRANS WORLD AIRLINES, INC.
Staff EngineeringKNOWN TUPROJET TRANSPORT CROZES

Delivery	Airline	Manufacturer & Type	Quantity	Engine	Passengers
Early 1960	PAA	Douglas DC-8	25	J75	108/131
Early 1959	PAA	Boeing 707	20	J57	104/122
Mid 1959	United	Douglas DC-8	30	J57	112/140
Early 1959	National	Douglas DC-8	6	J57	
Mid 1959	Eastern	Douglas DC-8	18	J57	
		Douglas DC-8	8	J75	
Late 1958	BOAC	Comet IV	20		
	American	Boeing 707	30	J57	-25
	Braniff	Boeing 707	5	J75	
	Air France Caravelle		12	Avon	
	KLM	Douglas DC-8	8	J57	
	Continental	Boeing 707	4		

PROBABLE TUPROJET TRANSPORT CROZES

Northwest	Boeing 707 or Douglas DC-8	8 - 10
Air France	Boeing 707 or Douglas DC-8	About 10
SAS	Douglas DC-8	5 - 7
Japan Air Lines	Douglas DC-8	About 3
Swissair	Douglas DC-8	About 3

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5-24-61

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TRANS WORLD AIRLINES, INC.
Staff EngineeringTWIN TURBO PROP TRANSPORT ORDERS

<u>Delivery</u>	<u>Airline</u>	<u>Manufacturer & Type</u>	<u>Quantity</u>	<u>Engine</u>
MIA 1958	American	Lockheed Electra	35	T56
MIA 1958	Eastern	Lockheed Electra	40	T56
Late 1955	BOAC	Britannia	13	
1957	BOAC	Viscount	12	
1957	Canadian Pacific	Britannia	3	
Early 1957	EL AL	Britannia	3	
1957	KLM	Viscount	12	
In Progress	Capital	Viscount	60	
In Progress	HA	Viscount	49	
In Progress	TWA	Viscount	25	
In Progress	Trans-Australia	Viscount	12	
Completed	Air France	Viscount	12	
	Continental	Viscount	8	
	Branniff	Electra	12	

PROBABLE TURBO PROP TRANSPORT ORDERS

Western	Lockheed Electra	7
National	Viscount	12
Canadian Pacific	Britannia	3
EL AL	Britannia	3
KLM	Vanguard	30

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5-24-61

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Trans World Airlines, Inc. - Staff Engineering

ATTACHMENT A

CURRENT & AIRCRAFT ON ORDER AS OF DEC. 1, 1955

Airline	On Hand		Ordered			
	Number	Type	Number	Delivered	Type	Estimated Delivery
AA	74	CV-340	4	0	DC-6A	
	9	DC-4 (Cargo)	12	0	DC-6B	Early 1956
	30	DC-4	14	0	DC-7	Late 1957
	3	DC-6A (Cargo)	30	0	DC-7	Early 1956
	25	DC-6B	35	0	B-707	1959
	25	DC-7			Electra (Turboprop)	Late 1956
Air France	12	Breguet	5	0	S-55 Helicopters	
	37	DC-3	24	0	Hurel HD-32	
	19	DC-4	12	0	Caravelle (Jet)	
	19	L-749A	12	0	L-1649A	1956
	9	L-1049C				
	10	L-1049B				
	6	Languedoc				
	12	Viscount				
BOAC	18	B-377	15	0	Brittania 100	1956
	9	L-749A	8	0	Brittania 300	1956
	7	L-749	10	0	Brittania (Long Range)	1957
	2	L-1049C	20	0	Comet IV	1959
	1	DC-4M2	10	0	DC-7C	Late 1956
	9	Hermes IV				
	4	York III (Cargo)				
	22	Argonauts				
			** On lease from SNA.			
KLM	1	Auster V3/1	10	0	DC-7C	Mid-1957
	7	CV-340	9	0	Viscount 800	Early 1957
	14	CV-340	2	0	F-27	
	16	DC-3	8	0	DC-6	
	7	DC-4				
	6	DC-4				
	2	DC-6A (Cargo)				
	6	DC-6B				
	10	L-749A				
	8	L-1049B				
	4	L-1049C				
EVA	7	DC-3			DC-7	
	17	DC-4				
	7	DC-6B				
	10	B-377				
	4	L-1049B				

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Trans World Airlines, Inc. - Staff Engineering

ATTACHMENT A

Airline	On Hand		Ordered		Estimated Delivery	
	Number	Type	Number	Delivered Type		
PAA-Atlantic	11	B-377	PAA - All Divisions. Divisional Assignment of Ordered Equipment Unknown.			
	7	DC-4				
	1	DC-6A (Cargo)				
	28	DC-6B				
	4	DC-7B				
PAA-Latin	5	CV-340	15	0	DC-7B	Early 1956
	4	DC-3	18	0	DC-7B	Early 1957
	7	DC-4	25	0	DC-8	Early 1960
	2	DC-6A (Cargo)	20	0	B-707	Early 1959
	15	DC-6B				
	8	L-049				
PAA-Pacific	6	DC-4				
	4	DC-6B				
	15	B-377				
TWA	5	DC-3	8	0	10490	Middle 1956
	4	DC-4	25	0	1649A	Early 1957
	7	DC-4 (Cargo)				
	11	B-302A				
	39	B-404				
	32	L-049				
	27	L-749A				
	12	L-749				
	10	L-1049				
	20	L-1049A				
	UAL	55	CV-340	5	0	DC-6A
13		DC-3	10	0	DC-6B	Early 1956
9		DC-4	11	0	DC-6B	Early 1957
10		DC-4 (Cargo)	17	0	DC-7	Early 1957
42		DC-6	30	0	DC-8	Middle 1959
21		DC-6B				
27		DC-7				

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ATTACHMENT 1

RESCHEDULED UNITED STATES AIRLINE FLIGHTS

[illegible]

• On Order

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Trans World Airlines, Inc. - Staff Engineering

SCHEDULED UNITED STATES AIRLINE FLIGHTS (Continued)

ATTACHMENT B

*Copy to
Smith.*

INTERNATIONAL	Passenger				Cargo				Other			
	1	2	3	4	5	6	7	8	9	10	11	12
Atlantic	6	3	5	8	50	330	4	5	26 B-377	25 DC-8s	20 B-377s	
Local												
Albuquerque	14											
Boston	3											
Central	9											
Frontier	13											
Lake Central	8											
Omaha	11											
North Central	18											
Omaha	16											
Piedmont	6											
Eastern	12											
Southwest	10											
Trans Texas	16											
Fort Worth	13											
Totals	143	108	117	136	570	990	115	63	98	124	5	99

On Order

051400

12/1/55

Trans World Airlines, Inc. - Staff Engineering

CANADIAN SCHEDULED AIRLINE FLIERS

ATTACHMENT 2

FLIER	EC-3	EC-7	DC-6A	AAC	Super	Canale	CV-240	C-46	Catalina	Bristol	Canoe	Canadair	Viacount	Others
Canadian Pacific	15	3	4	20			3	8	2					
Canadian Central	9									1	3			
Canair	5													
Canair Charter	2										2			
Canair											1			
TWA	27				10	8				3		23	7	150
Western											1			
Total	58	3	4	20	8	10	3	8	2	4	7	23	7	150

on order

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Trans World Airlines, Inc. - Staff Engineering

LATIN AMERICA SCHEDULED AIRLINES FLIGHTS

ATTACHMENT B

	DC-3	DC-4	DC-6B	DC-7C	Combs	Super Combs	CF-240	CF-340	Viscount	C-46	Others
Latin America											
Argentina	20	6	6				1				6 Sandringham
Poland											
World Force	13										3 B-17
Brazil											0
American Brazil	21	7	2								5 10 Ford 2401c
Caterpillar	4										
Grumman de Sul	16							4			
World Force	5										
Espresso Force	4										
Alta											3
Pensil de Brasil	17					7					5 Catalina
Real	12			30				80			
Super	6										
Transportes	6										
Vap	16										3 10 Seaside
Varig	23						3	3	3	13	
British Guiana											
B. Guiana Airways	3										
Chile											
LAF	16		20								2 M-202
Colombia											
Ayacucho	25	10									
Avianca	16										
Boya											
On Order											

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Trans World Airlines, Inc. - Staff Engineering
LATIN AMERICA SCHEDULED AIRLINE FLIGHTS (Continued)

ATTACHMENT 3

	DC-7	DC-7	DC-6	DC-6B	DC-7A	DC-7C	Super Console	Console	CV-240	CV-340	Viascom	Other
Ecuador												
Aerovías Ecuatorianas	3											2 Stratoliner
Peru												
Zuagetti	7	4										
Grupo de Transportes	8											4 Catalina
Dracuy												
Pluma	6											
Venezuela												
Avenas	20	2							30			
Teca de Venezuela	13											
LAV	21						2	2	2	2	2	2 H-302
CENTRAL AMERICA												
Costa Rica												
Lineas Aereas	3								20			
Guatemala												
Empresa Guatemalte	7											
Honduras												
Servicio Aereo	6											
TACA El Salvador	10											
On Order												

051403

Trans World Airlines, Inc. - Staff Engineering

LATIN AMERICA SCHEDULED AIRLINE FLIGHTS (Continued)

ATTACHMENT 2

Flight	DC-3	DC-4	DC-6	DC-6B A.C.	DC-7 B.A.C.	Const	Super Const	CT-240	CT-340	Viscount	C-46	Others
Aeromex de Mexico	23	2										
Aerolineas Intercontinentales	3											
Aerovias Azules	8											
Aerolineas de Argentina	20	6	4	2	4							
Aerolineas de Brasil	6											
Aerolineas de Chile												
Aerolineas de Colombia												
Aerolineas de Costa Rica												
Aerolineas de Ecuador												
Aerolineas de El Salvador												
Aerolineas de Guatemala												
Aerolineas de Honduras												
Aerolineas de Nicaragua												
Aerolineas de Panama												
Aerolineas de Paraguay												
Aerolineas de Peru												
Aerolineas de Uruguay												
Aerolineas de Venezuela												
Aerolineas de Argentina												
Aerolineas de Brasil												
Aerolineas de Chile												
Aerolineas de Colombia												
Aerolineas de Costa Rica												
Aerolineas de Ecuador												
Aerolineas de El Salvador												
Aerolineas de Guatemala												
Aerolineas de Honduras												
Aerolineas de Nicaragua												
Aerolineas de Panama												
Aerolineas de Paraguay												
Aerolineas de Peru												
Aerolineas de Uruguay												
Aerolineas de Venezuela												
Totals	488	46	12	3	4	18	10	12	2	3	44	
On Order												

051404

TWA Ex. 2, Annex C, page 12 of 15
(Statement of Robert W. Rummel)

Trans World Airlines, Inc. - Staff Engineering

RECHENUNGS- UND EUROPAISCHES VERFAHREN

	DC-3	DC-4	DC-6	DC-6B A & C	DC-7C B & C	Console	Super	CV-240	CV-340 A 470	Vacuumt	Ailing	Bristol	Other
Port Antonio	11												
Lima O/L	9												
Alcala Airtel (WSP)	12	4		3°								2°	1 Stratoliner 2 50-10, 1 C-46
Air Alcala	2	3				2							1 1-70 from AF 4 C-46, 6 50-10
Air 1389/Air Barco	3												12 Brequele, 6 Languecos, 5 S-55 Helicopters 24 Murel HD32 12 Caravelle (jet) 12 1649L*
Air Fresno	37	39		3°		19	19				12	2	3 Hermes
Air Berk	1			3°							3°	2	3 Hermes
Allatolia				3°					5				3 Britannia 100 LK
Aviation		1		2°								6	2 Languecos 2 Solent, 2 Hylke
Aquila													1 DC-3 (part) 6 DM-59A 20 + 1 Airspeed Ambassadors
USA	1										26	30	12 VRCO*, 20 VROO*
US Air Trans (UK)	3												9 Hermes, 1 DC-4C2, 16 B-377, 22 Argonauts 4 York III (Cargo) 33 Britannia 20 Const IV*
TORC													
Breathene	1	3			10°	16	2						
Sydney	6						1						
NY (Turkish)	18						1°						

• On Order

55/4/27 771085

051405

Trans World Airlines, Inc. - Staff Engineering

SCHEIDT 50 TROPICAN AIRLINE FLEETS (Continued)

DISCUSSION

[illegible]**Totals**

On Order

TWA Ex. 2, Annex C, page 14 of 15
(Statement of Robert W. Rummel)

Trans World Airline, Inc. - Staff Engineering

SCHEDULED-AFRICAN AND AUSTRALIAN AIRLINE FLIGHTS

WILSON

AFRICA													
	DC-3	DC-4	DC-6	DC-6B	DC-7	Combs	Super	CV-240	CV-340	Waco	Wing	Bristol	Others
Central African	1									50	10		
East African	5												
East African	1												
East African	6												
East African	8												
East African	1							2					
East African	2												
East African	3												
East African	4												
East African	7				30	4							
East African	4												
East African	4												
Totals	40	7			30	4		2		50	10	5	
AUSTRALIA													
Am-att Airways	6												
AVA	26	9	2	2									
Butler Airways	6												
Colman	3												
MacRobertson-Hillier	3												
Mendota Airlines	2												
Queensland Air	3												
Quantas	13	5				5	10						4 Sandringham, 4 Catalina 2 1049H (Carro)
FLA	24	4						5		6			
Totals	85	18	2	2		5	10	5	1	6		3	
NEW ZEALAND													
NZ NAC	23												
Transair Empire													
Totals	23												1 Solent On Order

Trans World Airlines, Inc. - Staff Engineering
SCHEDULED ASIAN AIRLINE FLIGHTS

ATTACHMENT B

OTHER	170	170	700	CV-340	CV-240	Comble	Super	Comble	DC-7C	DC-6B	DC-6	DC-7	DC-3	OTHER
Amey														
Air Jordan														
Air Japan														
Air Korea														
Air Lanka														
Air Malaya														
Air New Zealand														
Air Pakistan														
Air Philippines														
Air Singapore														
Air Siam														
Air Thai														
Air Union of Soviet Republics														
Air Vietnam														
Air Zaire														
Air India														
Indian Airlines														
Orion Airlines														
Union of Burma														
U.S. EAST														
Air Vietnam														
CVT Fortness														
Gateway Pacific														
Garmin														
Air Japan														
Air Korea														
Air Malaya														
Air New Zealand														
Air Singapore														
Air Siam														
Air Thai														
Air Union of Soviet Republics														
Air Vietnam														
Totals	224	25	1	4	30	13	8	10	6	14	24	9	20	

12/13/55

051408

20 On Order

TWA Ex. 2, Annex D, page 1 of 13
(Statement of Robert W. Rummel).

to Statement of
R. W. Rummel

TWA'S STATEMENT OF IMPROVEMENT
OF DELIVERY POSITIONS

To measure the improvement in delivery dates which TWA would have obtained over the actual delivery dates of aircraft it received had TWA ordered jet aircraft from Boeing at about the same time as Pan American and American and in comparable numbers, the actual delivery dates of Boeing jet aircraft to Pan American, TWA and American are reallocated among those three customers.

Since a substantial production effort of Boeing would have been directed to serving Pan American, TWA and American, as was the fact, and without changing the delivery positions Boeing in fact reserved and used for other customers, this Statement uses such actual delivery dates of aircraft to these three customers as the best available indication of when Boeing could have delivered such aircraft to Pan American, TWA and American. Actual delivery dates are used rather than contract delivery dates since, to the extent there may have been variations or improvements by Boeing over contract dates, as was the fact, the actual delivery dates are the most reliable.

The reallocation reflects the following assumptions:

(1) Pan American, American and TWA ordered Boeing 707 jet aircraft in the quantities actually ordered in 1955 and 1956 by Pan American, American and Hughes Tool Company respectively, and TWA ordered at about the same time as Pan American and American.

(2) Pan American, TWA and American all sought as early delivery positions as Boeing would provide.

(3) Pan American obtained the first three delivery positions of the 120 series, such aircraft to be used in the Boeing certification program.

(4) Boeing's deliveries to American of the 120 series would have reflected Boeing's efforts at least to equalize early delivery positions as between TWA and American.

(5) TWA obtained the first three delivery positions of the 320 (330) series, such aircraft to be used in the Boeing certification program.

(6) Boeing would have delivered the remaining aircraft of the 320 (330) series on a basis which would have provided Pan American and TWA with substantially equivalent numbers of 320 (330) aircraft by the end of the first six months after the delivery of the first aircraft to TWA, with deliveries to Pan American and TWA made on a substantially equivalent basis per month.

707-120 Series

The following sets forth the actual delivery dates of aircraft of the Boeing 707-120 Series to Pan American, American and TWA:

-4-

TWAPAAAAL

8/15/58

9/29/58

10/16/58

10/30/58

11/30/58.

12/19/58

10/23/58 ✓

12/31/58

1/29/59

1/23/59

1/31/59

2/13/59

2/27/59

3/17/59

3/27/59

3/30/59

4/3/59

4/9/59

4/18/59

4/23/59

4/29/59

5/10/59

5/4/59

5/13/59

5/12/59

5/24/59

5/21/59

5/28/59

5/28/59

6/13/59

6/5/59

6/24/59

6/29/59

7/1/59

7/27/59

7/10/59

7/31/59

7/14/59

8/1/59

8/12/59

8/24/59

9/15/59

10/5/59

10/14/59

10/28/59

11/20/59

-5-

Reallocation

The following sets forth a delivery pattern using actual delivery dates reallocated among Pan American, American and TWA. It is posited that Pan American was selected by Boeing as the first customer rather than TWA and therefore received the first three 120 aircraft, and further, that American received the fourth such aircraft (which was the fact).

-6-

REALLOCATION

Boeing
Production
(PAA, AA, TWA)
Available
for Month

PAAAATWA1958

August	1	8/15/58 (P)		
Number in Fleet		1		
September	1	9/29/58 (P)		
Number in Fleet		2		
October	3	10/16/58 (P)	10/23/58 (A) 10/30/58 (P)	
Number in Fleet		3	2	
November	1			11/30/58 (P)
Number in Fleet		3	2	1
December	2	12/19/58 (P)		12/31/58 (A)
Number in Fleet		4	2	2

1959

January	3	1/23/59 (A)	1/29/59 (T)	1/31/59 (A)
Number in Fleet		5	3	3
February	2		2/13/59 (A)	2/27/59 (A)
Number in Fleet		5	4	4
March	3	3/17/59 (T)	3/27/59 (A)	3/30/59 (T)
Number in Fleet		6	5	5

-7-

REALLOCATION

Boeing
Production
(PAA, AA, TWA)
Available
for Month

PAA
AA
TWA
1959

April

5

4/9/59 (A)

4/3/59 (T)

4/23/59 (A)

4/18/59 (T)

4/29/59 (T)

Number in Fleet

8

7

May

8

5/4/59 (A)

5/10/59 (T)

5/12/59 (A)

5/13/59 (T)

5/21/59 (A)

5/24/59 (T)

5/28/59 (A)

5/28/59 (T)

Number in Fleet

12

11

June

4

6/5/59 (A)

6/13/59 (T)

6/24/59 (A)

6/29/59 (A)

Number in Fleet

14

13

July

5

7/1/59 (T)

7/10/59 (T)

7/14/59 (T)

7/27/59 (A)

7/31/59 (A)

Number in Fleet

17

15

August

3

8/1/59 (T)

8/12/59 (A)

8/24/59 (A)

Number in Fleet

20

-8-

REALLOCATION

Boeing
Production
(PAA, AA, TWA) /
Available
for Month

PAAAATWA1959

September

1

9/15/59 (A)

Number in Fleet

21

October

3

10/5/59 (A)
10/14/59 (A)
10/28/59 (A)

Number in Fleet

24

November

1

11/20/59 (A)

Number in Fleet

25

T - TWA)

P - PAA) As Originally Delivered

A - AA)

-9-

707-320 Series

The following sets forth the actual delivery dates on which aircraft of the Boeing 707-320 Series were delivered to Pan American and TWA. The aircraft designated "H" were those ordered by Toolco but in fact delivered to Pan American.

The aircraft delivered to TWA on April 1, 1960 was in fact ready for delivery February 29, 1960 and not delivered then because Toolco did not present payment. The aircraft delivered to TWA on April 5, 1960 was ready for delivery on March 3, 1960 and similarly was not delivered then because Toolco did not present payment. Accordingly, with respect to these two aircraft the "ready for delivery" date is set forth as well as the actual delivery date and the "ready for delivery" date will be used in reallocation.

-10-

TWAPAA

7/19/59

8/22/59

8/28/59

9/ 1/59

9/22/59

10/ 2/59

10/ 6/59

10/19/59

10/27/59

10/29/59

11/ 5/59 (H)

11/10/59

11/10/59

11/25/59

12/15/59 (H)

12/23/59

12/30/59 (H)

12/ 8/59

12/13/59

1/18/60

1/13/60

1/28/60

3/23/60 (H)

3/ 5/60

<div>Ready</div> <div>2/29/60</div> <div>3/ 3/60</div>	<div>}</div> <div>-----</div> <div>-----</div>	

4/ 1/60

4/26/60

4/ 5/60

4/28/60

4/14/60

4/29/60 (H)

5/ 9/60

5/25/60

6/ 8/60 (H)

7/ 1/60

7/ 1/60

-11-

Reallocation

The following sets forth the delivery dates of the 707-320 Series to TWA and Pan American had TWA been selected as the first customer for the 320 Series and therefore received the first three such aircraft.

The six aircraft ordered by Toolco which were ultimately delivered to Pan American (identified by "H") are included in this reallocation. This reallocation assumes that had Pan American not received the six 707-331 jet aircraft ordered by Toolco, the earliest delivery dates for six 707-320 jet aircraft which Pan American could have obtained from Boeing upon ordering six such jet aircraft in July, 1959 (the date of its arrangements with Toolco for delivery of the six aircraft), would have been one aircraft in February, 1961, two aircraft in March, 1961, two aircraft in April, 1961 and one aircraft in May, 1961. These, if ordered, would have been received subsequent to the period covered by this reallocation:

-12-

ALLOCATION

	<u>Boeing Production (PAA & TWA) Available for Month</u>	<u>TWA</u>	<u>PAA</u>
<u>1959</u>			
July	1 Number in Fleet	7/19/59 (P) 1	
August	2 Number in Fleet	8/22/59 (P) 8/28/59 (P) 3	
September	2 Number in Fleet	9/22/59 (P)	9/ 1/59 (P)
October	5 Number in Fleet	10/ 6/59 (P) 10/27/59 (P) 6	10/ 2/59 (P) 10/19/59 (P) 10/29/59 (P) 4
November	4 Number in Fleet	11/ 5/59 (H) 11/10/59 (T) 8	11/10/59 (T) 11/25/59 (T) 6
December	5 Number in Fleet	12/15/59 (H) 12/30/59 (H) 10	12/ 8/59 (P) 12/13/59 (P) 12/23/59 (T) 9

-13-

REALLOCATIONBoeing
Production
(PAA & TWA)
Available
for Month

1960		TWA	PAA
January	3	1/18/60 (T)	1/13/60 (P)
	Number in Fleet	11	1/28/60 (P)
February	1	2/29/60 (T)	11
	Number in Fleet	12	11
March	3	3/23/60 (H)	3/ 3/60 (T)
	Number in Fleet	13	3/ 5/60 (P)
April	4	4/26/60 (P)	13
	Number in Fleet	4/29/60 (H)	4/14/60 (T)
May	2	5/ 9/60 (T)	4/28/60 (P)
	Number in Fleet	15	15
June	1	5/25/60 (T)	16
	Number in Fleet	16	16
July	2	6/ 8/60 (H)	17
	Number in Fleet	17	16
	Number in Fleet	7/ 1/60 (T)	7/ 1/60 (T)
	Number in Fleet	18	17

- PAA
 - TWA

} As Originally Delivered

**BOEING AIRPLANE COMPANY
TRANSPORT DIVISION****RENTON, WASHINGTON**

July 27, 1959

TELEPHONE BROADWAY 2121

IN REPLY REFER TO

6-1100-60-137

Mr. R. W. Rummel
10 Richards Road
Kansas City, Missouri

Through: Mr. Edwin Zak
Resident Representative

Subject: Proposal for the Sale of Six (6) Increased Gross
Weight Model 707-331 Aircraft to Hughes Tool Company

Gentlemen:

We wish to amend and supplement letter proposal 6-1100-2-591 to reflect delivery schedules of the six (6) Boeing Model 707-331 aircraft.

Please be advised that the present paragraph III, "Delivery Schedule" of letter proposal 6-1100-2-591 is stricken in its entirety and the following is hereby substituted in lieu thereof:

"III. Delivery

The six (6) Model 707-331 aircraft will be delivered according to the following schedules:

If a firm commitment is made by Hughes Tool Company by August 1, 1959

<u>Month of Delivery</u>	<u>Quantity</u>
February 1961	1
March 1961	2
April 1961	2
May 1961	1

If a firm commitment is made by Hughes Tool Company by September 1, 1959

<u>Month of Delivery</u>	<u>Quantity</u>
March 1961	1
April 1961	2
May 1961	2



BOEING AIRPLANE COMPANY
TRANSPORT DIVISION
RENTON, WASHINGTON

TWA Ex. 2, Annex E, page 2 of 2
(Statement of Robert W. Rummel)

If a firm commitment is made by Hughes Tool Company
by October 1, 1959

<u>Month of Delivery</u>	<u>Quantity</u>
April 1961	1
May 1961	2
June 1961	2
July 1961	1"

All other provisions of the letter proposal 6-1100-2-591 remain
unchanged.

Very truly yours,

BOEING AIRPLANE COMPANY
Transport Division

T. L. Spalding
T. L. Spalding, Manager
Contract Administration

TEA Ex. 2, Annex F, page 1 of 6
(Statement of Robert W. Rummel)

ANNEX F TO STATEMENT OF R. W. RUMMEL

ACTUAL JET DELIVERIES --
ACTUAL PISTON RETIREMENTS

ACTUAL PISTON RETIREMENTS				RECONSTRUCTED PISTON RETIREMENTS				
Actual Delivery Jet Aircraft		Retirement of Pistons as of Delivery of each Jet		Type	Jet- Gain Days	Timely Jet Delivery	Piston- Gain Days	Reconstructed Piston Retirement
No.	Type	No.	Type License Date					
1	131	1	202A N93201 12-31-58	131	60	11-30-58	60	11- 1-58
2	131	2	202A N93203 12-31-58				60	11- 1-58
3		3	202A N93210 12-31-58				60	11- 1-58
4	131	4	202A N93212 12-31-58	131	60	11-30-58	60	11- 1-58
5		5	404 N40426 2-16-59					
6	131	6	404 N40429 3-12-59	131	76	12-31-58	76	12- 2-58
7		7	404 N40425 3-25-59					
8	131			131	59	1-31-59	59	1-26-59
9	131			131		3-27-59		
10	131			131		3-30-59		
11	131			131		4- 3-59		
12	131			131		4-18-59		
13	131			131		5-10-59		
14	131			131		5-13-59		
15	131			131		5-24-59		
16	131			131		5-28-59		
17	131			131		6-13-59		
18	131	8	DC-4 N34577 6-26-59	131	18	6-13-59	18	6- 8-59
19		9	DC-4 N34538 7- 4-59					
20		10	DC-4 N44994 7- 4-59					
21		11	DC-4 N45344 7- 4-59					
22		12	DC-4 N45346 7- 4-59					
23		13	202A N93205 7-10-59					
24	131			131	11	6-29-59	11	6-29-59
25	131			131		7-10-59		

TWA Ex. 2, Annex F, page 2 of 6
(Statement of Robert W. Rummel)

Page 2 of 6

ACTUAL JET DELIVERIES -- ACTUAL PISTON RETIREMENTS				TIMELY JET DELIVERIES -- RECONSTRUCTED PISTON RETIREMENTS			
Actual Delivery Jet Aircraft	Retirement of Pistons as of Delivery of each Jet	Type		Jet- Gain Days	Timely Jet Delivery	Piston- Gain Days	Reconstructed Piston Retirement
No. Type Date	No. Type License Date	Type					
15 131 8-1-59	14 202A N93209 7-20-59	331		13	7-19-59	13	7-7-59
	15 202A N93207 7-28-59					13	7-15-59
	16 1049G N7121C 7-31-59					13	7-18-59
	17 202A N93204 8-3-59						
	18 404 N40431 8-4-59					106	4-19-59
	19 202A N93202 8-11-59					106	4-20-59
	20 049 N9412H 8-26-59					106	4-27-59
	21 202A N93206 10-1-59					106	5-12-59
	22 202A N93208 10-1-59					106	6-17-59
	23 749A N6009C 10-27-59					106	6-17-59
	24 404 N40440 11-6-59					106	7-13-59
16 331 11-10-59		131		106	7-27-59		7-23-59
17 331 11-10-59		331			8-22-59		
18 331 11-25-59	25 404 N40439 11-12-59					89	8-15-59
19 331 12-23-59		331		89	8-28-59		
		331			9-22-59		
20 331 1-18-60	26 1049 N6905 1-6-60					104	9-24-59
	27 404 N40428 1-15-60	331		104	10-6-59	104	10-3-59
	28 404 N40405 2-25-60					157	9-21-59
	29 404 N40412 3-12-60					157	10-7-59
	30 1049 N6905 4-1-60					157	10-27-59
21 331 4-1-60		331		157	10-27-59		
22 331 4-5-60		331			11-5-59		
23 331 4-14-60		331			11-10-59		
24 331 5-9-60		880			11-15-59		
25 880 5-18-60		880			12-15-59		
26 331 5-25-60		331			12-15-59		

TWA Ex. 2, Annex F, page 4 of 6
(Statement of Robert W. Rummel)ACTUAL JET DELIVERIES --
ACTUAL PISTON RETIREMENTS

Actual Delivery Jet Aircraft	Retirement of Pistons as of Delivery of each Jet		
No. Type Date	No. Type License	Date	
42 880 5-25-61	44 049 N9409H	5-12-61	
43 880 6-9-61	45 049 N6000C	5-16-61	
	46 049 N86517	5-24-61	
44 880 7-9-61	47 049 N90830	6-23-61	
	48 404 N40402	6-29-61	
45 720B 7-22-61	49 404 N40434	7-11-61	
46 720B 8-2-61			
47 880 8-10-61			
48 720B 8-27-61	50 1049A N7320C	8-11-61	
	51 1049A N7308C	8-30-61	
49 880 9-2-61	52 1049H N5401V	9-2-61	
	53 1049H N5404V	9-10-61	
	54 1049H N5402V	9-15-61	
	55 1049H N5403V	9-21-61	
50 720B 9-30-61			
51 880 10-13-61	56 10490 N7109C	11-10-61	
	57 DC-4 N45343	11-20-61	
	58 749A N6017C	11-24-61	
	59 404 N40401	12-31-61	
	60 404 N40405	12-31-61	

TIMELY JET DELIVERIES --
RECONSTRUCTED PISTON RETIREMENTS

Type	Jet-Gain Days	Timely Jet Delivery	Piston-Gain Days	Reconstructed Piston. Retirement
880	375	5-15-60	375	5-2-60
880		5-15-60	375	5-6-60
			375	5-14-60
880	420	5-15-60	420	5-13-60
			420	5-19-60
880	409	6-8-60	409	5-28-60
331				
880	409	6-15-60		
880		6-15-60		
880	438	6-15-60	438	5-29-60
880	438	6-15-60		
			444	6-12-60
880	444	6-15-60	444	6-15-60
			456	6-11-60
			456	6-16-60
			456	6-22-60
331	456	7-1-60		
880		7-15-60		
			622	2-26-60
			622	3-8-60
			622	3-12-60
			622	4-18-60
			622	4-18-60

TIMELY JET DELIVERIES --
RECONSTRUCTED PISTON RETIREMENT

Actual Delivery Jet Aircraft		Retirement of Pistons as of Delivery of each Jet	
No.	Type	License	Date
61	404	N40407	12-31-61
62	404	N40410	12-31-61
63	404	N40411	12-31-61
64	404	N40413	12-31-61
65	404	N40414	12-31-61
66	404	N40415	12-31-61
67	404	N40417	12-31-61
68	404	N40418	12-31-61
69	404	N40419	12-31-61
70	404	N40420	12-31-61
71	404	N40421	12-31-61
72	404	N40423	12-31-61
73	404	N40424	12-31-61
74	404	N40430	12-31-61
75	404	N40433	12-31-61
<hr/>			
76	049	N86500	3-31-62
77	049	N86501	3-31-62
78	049	N86502	3-31-62
79	049	N86503	3-31-62
80	049	N86504	3-31-62
81	049	N86506	3-31-62
82	049	N86509	3-31-62
83	049	N86514	3-31-62
84	049	N86515	3-31-62
85	049	N86516	3-31-62
86	049	N86526	3-31-62
87	049	N86536	3-31-62
88	049	N90814	3-31-62
89	049	N90815	3-31-62
90	049	N90816	3-31-62

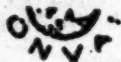
ACTUAL JET DELIVERIES --
ACTUAL PISTON RETIREMENTS

TIMELY JET DELIVERIES --
RECONSTRUCTED PISTON RETIREMENTS

Actual Delivery Jet Aircraft No. Type Date	Retirement of Pistons as of Delivery of each Jet			Type	Jet- Gain Days	Timely Jet Delivery	Piston- Gain Days	Reconstructed Piston Retirement
	No.	Type	License Date					
53 131B 4-10-62	91	049	N90817	3-31-62			634	7-5-60
54 131B 4-30-62	92	049	N90818	3-31-62			634	7-5-60
55 131B 5-18-62	93	049	N90823	3-31-62			634	7-5-60
56 131B 5-24-62	94	049	N90825	3-31-62			634	7-5-60
57 131B 5-30-62	95	049	N90826	3-31-62			634	7-5-60
	96	049	N90924	3-31-62			634	7-5-60
	97	049	N90926	3-31-62			634	7-5-60
	98	049	N9410H	3-31-62			634	7-5-60
	99	049	N9414H	3-31-62			634	7-5-60
	100	049	N54214	3-31-62			634	7-5-60
					880	634		
					880	7-15-60		
					880	7-15-60		
					880	7-15-60		
					880	8-15-60		
					880	8-15-60		
	101	1049	N6903	6-1-62			670	7-31-60
	102	1049	N6904	6-1-62			670	7-31-60
					880	8-15-60		
					880	8-15-60		
	103	749A	N6012C	7-20-62			707	8-12-60
					880	8-15-60		
					880	9-15-60		
					880	9-15-60		
					880	9-15-60		

CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION

**CHRONOLOG**

GENERAL OFFICES
SAN DIEGO 12 CALIFORNIA
TELEPHONE EXPRESS 8-6011

4 June 1956

P-2 TWA	R-3 HAWK
EXHIBIT 5/2/66	E. d.

Hughes Tool Company
Houston, Texas

Gentlemen:

Pursuant to discussions with your company and at your request, we hereby agree to amend the Agreement between our companies for the purchase and sale of thirty (30) Model 22 (Skylark 600) Aircraft, and the same is hereby amended, as follows:

By striking Article 4 (a) of said Agreement and inserting in lieu thereof the following: "(a) Except for Buyer's obligation to reimburse a portion of CONVAIR's costs as expressly provided below, this contract shall be and become null and void and of no force and effect unless (1) within fifteen (15) days from the date hereof (or such longer period as Buyer and CONVAIR may mutually agree upon in writing) the Agreement between CONVAIR and Delta has been executed as contemplated by Article 8 (d) hereof, and unless (2) within a period of sixty (60) days from the date hereof (or such longer period as Buyer and CONVAIR may mutually agree upon in writing) Buyer and CONVAIR complete and execute a mutually satisfactory definitive purchase agreement and detail specification. In the event of termination on account of the failure of the first condition set out in the preceding sentence, all liabilities and obligations of every kind between the parties will thereby be discharged. In the event of termination on account of the failure of the second of the said two conditions, all liabilities and obligations of every kind between the parties will thereby be discharged except that Buyer shall pay one-half of CONVAIR's costs expended on the Model 22 program from the date of this Agreement to the date of termination but not to exceed \$100,000."

Hughes Tool Company

-2-

4 June 1956

We would appreciate the return to us of two copies of this letter, executed by an appropriate official of your company, simultaneously with the return of the aforesaid Agreement similarly executed.

Very truly yours,

GENERAL DYNAMICS CORPORATION

By [Signature]
Executive Vice President
Convair Division

Accepted and agreed to this

7th day of June, 1956

HUGHES TOOL COMPANY

By [Signature]
Title Vice President

THIS INSTRUMENT (hereinafter called the "Agreement") entered into as of this 7th day of ^{June} 1956, by and between: GENERAL DYNAMICS CORPORATION, a Delaware corporation, having an office (Convair Division) at San Diego, California (hereinafter called "CONVAIR"), and HUGHES TOOL COMPANY, with its offices at Houston, Texas (hereinafter called "Buyer");

WITNESSETH:

WHEREAS, Buyer desires to purchase aircraft of the type hereinafter described and CONVAIR desires to manufacture and sell the same to Buyer; and

WHEREAS, CONVAIR anticipates entering into a similar agreement with Delta Air Lines, Inc., hereinafter called "Delta" relating to the manufacture and sale of not less than ten (10) Convair Model 22 (Skyhawk 600) aircraft, containing the same provisions as to price as hereinafter set out, and

WHEREAS, CONVAIR is unwilling to enter into a program of manufacturing said aircraft unless and until it has firm agreements covering the manufacture and sale of a substantial number of such aircraft, or unless Buyer hereinafter and Delta will participate in CONVAIR's losses in the event it fails to sell thirty (30) Model 22 commercial aircraft in addition to the aircraft sold to Buyer and Delta as hereinafter set out, and

WHEREAS, Buyer desires CONVAIR to initiate such program and is therefore willing to participate in CONVAIR's losses in the event CONVAIR fails to sell thirty (30) of such aircraft in addition to the aircraft sold to Buyer and Delta as hereinafter set out, to the extent and in the manner hereinafter provided; and

THEY, THEREFORE, in consideration of the mutual covenants herein

ARTICLE A

Subject Matter of Sale

CONVAIR shall manufacture and sell and deliver to Buyer, and Buyer shall purchase from CONVAIR the following:

- (a) Thirty (30) Convair Model 22 (Slylark 500) Aircraft (hereinafter called "Aircraft") to be manufactured by CONVAIR in accordance with the terms of this Agreement.

Delivery of Aircraft**(a) Delivery Schedule**

- (3) CONVAIR shall manufacture aircraft for delivery on the following schedule:

<u>Month of Delivery</u>	<u>Number of Aircraft</u>
November 1959	1
December 1959	1
January 1960	2
February 1960	2
March 1960	3
April 1960	4
May 1960	4
June 1960	5
July 1960	6
August 1960	6
September 1960	6

X The above schedule represents the first forty (40) Model 22 aircraft to be manufactured and delivered by CONVAIR, thirty (30) of which shall be delivered to Buyer subject to (b) below, ready for flight. Prior to execution of the definitive purchase agreement referred to in Article 4 hereof, Buyer shall designate the Aircraft by manufacturing number to be delivered to Buyer with due regard to delivery positions desired by Delta Air Lines as an initial purchaser of Model 22 aircraft with Buyer. Y

- (2) CONVAIR recognizes the importance to Buyer of early deliveries

(Toolco-Convair Amended Agreement - Model 22, 6/4/56)
of the Aircraft hereunder and agrees to use its best efforts to better the above delivery schedule.

- (3) Upon delivery to Buyer of each Aircraft in accordance with the terms hereof, title to and risks in connection with such Aircraft shall pass from CONVAIR to Buyer.
- (4) In the event any Aircraft is ready for delivery and CONVAIR so notifies Buyer of this fact but delivery of any such Aircraft is delayed by Buyer (whether or not such delay is out of Buyer's control) Buyer shall promptly reimburse CONVAIR for all cost or expense, including, but not limited to, reasonable compensation for storage, insurance and all taxes of every nature whatsoever, incurred by CONVAIR during, or paid or incurred as a result of any such delay in excess of one (1) week. The provisions of this paragraph (a)(4) shall not apply to delays in delivery, if any, referred to in paragraph (b) of this Article, occurring prior to final certification.

(b) Certification

- (1) The schedule of CONVAIR's performance hereunder provides for completion of all ground and flight tests required by the Civil Aeronautics Administration to obtain final airworthiness and type certificates by 1 May 1960. Because of the importance to Buyer of early issuance of the airworthiness and type certificates, CONVAIR agrees to use its best efforts to better the above date.
- (2) Prior to receipt of final certificates as defined in sub-paragraph (1) above, CONVAIR will have completed tests of the Air-

craft ready for delivery in all respects except for such minor certification, and CONVAIR will tender delivery to Buyer of all such Aircraft and Buyer will accept delivery from CONVAIR of such completed Aircraft to the extent that they can be used by Buyer for pilot training and/or other purposes, but conditioned upon and subject to CONVAIR's obtaining final certificates at a later date. CONVAIR may require return of such delivered Aircraft for purposes of obtaining such final certificates and Buyer agrees to make them available for this purpose, upon reasonable notice, in such manner as CONVAIR may direct. Subject to the provisions of the following subparagraphs (3) and (4), all costs, if any, in connection with obtaining such final certificates shall be borne by CONVAIR.

- C
(3) "If any law, directive, order, proclamation, regulation or ruling of the United States Government or any agency thereof, becomes effective after the date of this Agreement which requires any change, addition or modification to any aircraft in order to obtain an Airworthiness Certificate from the United States Civil Aeronautics Administration, such change, addition or modification shall be made and evidenced by a Change Order specifying the effect, if any, of such change on design, performance, weight, balance and time of delivery. The cost of making any such change, addition or modification shall be borne equally by CONVAIR and Buyer; subject, however, to negotiation of definitive purchase agreement provisions that CONVAIR bear such costs solely for its own account in event the parties mutually agree upon an appropriate price increase in compensation thereof.

2.1.2

(h) " If any law, directive, order, proclamation, regulation or ruling of the United States Government or any agency thereof, other than one required to obtain certification of an Aircraft as set forth in the preceding paragraph becomes effective after the date of this agreement, which requires any change, addition or modification to any Aircraft in order that Buyer may operate any of said Aircraft as it requires, such change, addition or modification shall be offered to Buyer as a Change Order specifying the effect, if any, of such change on price, design, performance, weight, balance and time of delivery. The cost of making such change, addition or modification shall be borne by Buyer; subject, however, to negotiation of definitive purchase agreement provisions that CONVAIR bear such costs solely for its own account in event the parties mutually agree upon an appropriate price increase in consideration thereof. " C

ARTICLE 2Price of and Payment for Aircraft

- (a) Price. The total Base Price of the Aircraft purchased hereunder shall be \$112,500,000.00, computed on a unit Base Price of \$3,750,000.00 per unit delivered in accordance with Article 2 hereof, subject to adjustments as set forth in Exhibit A hereto attached and made a part hereof.
- (b) Payments. The total Base Price of the Aircraft purchased hereunder shall be paid as follows:
- (1) \$16,250,000.00 upon execution of the definitive purchase agreement referred to in Article 4 hereof, representing \$575,000.00 per aircraft for each of the thirty (30) Aircraft, and
 - (2) The balance of the unit Base Price upon delivery of each of the Aircraft.

Definitive Purchase Agreement and Detail Specification

- (a) The parties shall, commencing immediately following execution of this Agreement, define the terms and conditions of a mutually satisfactory definitive purchase agreement and detail specification, and it is hereby agreed that both parties will, in good faith, use their best efforts to complete and execute such definitive purchase agreement and detail specification within sixty (60) days from date hereof, and failure to so complete and execute shall operate to terminate this Agreement except that said sixty (60) day period may be extended by mutual written agreement of the parties hereto. In the event of such termination, Buyer shall pay one-half of CONVAIR's costs expended on the Model 22 program from the date of this Agreement to the date of termination, but not to exceed \$160,000.
- (b) Said definitive purchase agreement will include other terms and conditions usually incorporated in contracts for the manufacture of commercial transport aircraft, including but not limited to, warranties, considerations of spare parts, changes, indemnity against patent infringement, taxes, customer furnished equipment, data and handbooks, Buyer's representatives and inspection, demonstration and test flights, and excusable delays.
- (c) In developing the definitive purchase agreement and detail specification, CONVAIR shall give due and proper consideration to Buyer's desires. CONVAIR shall make such further reasonable changes in the detail specification agreed upon at the time of

execution of the definitive purchase agreement, prior to and during aircraft manufacture, as Buyer desires, subject to Buyer's acceptance of reasonable price increase or decrease and reasonable and normally related delivery and specification effects. It is the mutual desire of the parties that Buyer shall fully disclose, and CONVAIR shall fully take into account, specific existing operating experience and needs as known to Buyer, to the end that the Aircraft shall have excellent characteristics of performance, versatility, growth possibilities, passenger comfort and appeal, and operating and maintenance utility and economy, with the detail specification as reflecting in a manner no less qualified or restricted than is normal among aircraft manufacturers. The parties shall fully cooperate in implementation of the foregoing, and full mutual consideration shall be given to all feasible alternatives known or foreseeable concerning such matters as cockpit and cabin interior arrangements and furnishings, and choice of engines and aircraft equipment and systems. The warranties applicable to the engines shall be satisfactory to Buyer.

ARTICLE 5

Warranties

- (a) Subject to the provisions of Article 2(b), CONVAIR warrants that the Aircraft delivered under or pursuant to this Agreement will be certificated by the United States Civil Aeronautics Administration with an appropriate airworthiness and type certificate in the transport category within the meaning of the Civil Air Regulations issued by the Civil Aeronautics Board, and that such certificate will permit the operation of such Aircraft in scheduled passenger service.
- (b) CONVAIR's warranties with respect to design, workmanship, and materials will be set forth in the definitive purchase agreement referred to in Article 4 hereof.

Assignments

- (a) This Agreement shall inure to the benefit of and be binding upon each of the parties hereto and their respective successors and assigns, but it may not be voluntarily assigned, in whole or in part, by either party without the prior written consent of the other party, except that either party's interest shall be assignable through merger, consolidation or reorganization which includes voluntary sale or transfer of substantially all of its assets, provided, however, that CONVAIR may assign any of its fixed or contingent rights to receive money hereunder, and Buyer may assign any of its contingent rights to the Aircraft or any of them for the purpose of securing any obligation for the repayment of monies loaned or advanced by any financial institution to finance in whole or in part the purchase of the Aircraft. Notwithstanding the foregoing, Buyer shall have the right to assign this Contract in whole or in part without such consent to TRANS WORLD AIRLINES, INC., and upon such assignment and full notice thereof to CONVAIR, TRANS WORLD AIRLINES, INC. shall succeed to each of the rights and obligations of the Buyer hereunder as are so assigned and the Buyer shall cease to have or be subject to such rights or obligations so assigned; provided, that Buyer shall, in the event of the assignment to TRANS WORLD AIRLINES, INC., of Buyer's payment obligations under this Contract, guarantee the due and punctual payment of such obligations by said assignee.

ARTICLE 7

Contract with Other Purchasers

- (a) If subsequent to the date of this Agreement if CONVAIR shall contract to sell to any other purchaser prior to any of the first one thousand (1,000) aircraft of the same basic model at a price less than (1) \$1,500,000 each or (2) the then accepted Unit Base Price to be paid by Buyer in accordance with Exhibit A hereto, whichever is lower, plus or minus appropriate adjustments for labor and material escalation and for variations in specifications and equipment, or on other terms and conditions materially more favorable than those incorporated in the definitive purchase agreement mentioned in Article 4 hereof, except in respect to financing requirements, the purchase price of all Aircraft to be delivered hereunder shall be reduced to the lowest price to be paid by any such other purchaser and such other more favorable terms and conditions shall by appropriate amendment be offered to Buyer.

ARTICLE 8Miscellaneous

- (a) Each party hereto shall, within sixty (60) days after the execution of this Agreement, deliver to the other party a certified copy of a resolution of its Board of Directors, or Executive Committee thereof, duly adopted at a meeting thereof duly held, evidencing the authority of the officer or officers executing this Agreement to execute same in the name of or in behalf of said party or ratifying the execution of same by such officer or officers.
- (b) The terms "Civil Aeronautics Administration" and "Civil Aeronautics Board" as used in this Agreement shall be deemed to include any other authority that shall be designated to perform the duties corresponding to the duties now performed by said Administration or by said Board.
- (c) This Agreement shall not be varied in its terms by any oral agreement or representation or otherwise than by an instrument in writing of even or subsequent date hereto, executed by both parties by their officers thereunto duly authorized.
- (d) This Agreement shall terminate fifteen (15) days from the date hereof unless the agreement referred to in the Seventh Whereof clause hereof has been executed by CONVAIR and Delta; and CONVAIR shall immediately execute such agreement and tender same to Delta for execution. CONVAIR shall notify Buyer in writing immediately upon the execution of such agreement by Delta and CONVAIR. CONVAIR will strive diligently to

(Toolco-Convair Amended Agreement - Model 22, 6/4/56)

effect as many additional sales as possible and to achieve a profitable position for the Model 22 program.

Executed in quadruplicate as of the day and year first above written.

GENERAL DYNAMICS CORPORATION

By /s/ J. V. Faish

J. V. Faish

Title Executive Vice President,
Convair Division

Attest:

/s/ Edward Durke

Assistant Secretary

HUGHES TOOL COMPANY

By /s/ Raymond M. Holliday

Raymond M. Holliday

Title Vice President

By _____

Title _____

Attest:

/s/ C. S. Johnson

C. S. Johnson

Secretary

1. The Unit Base Price of \$3,750,000 stated in Article 3(j) of this Agreement shall be reduced, without regard to the proviso in paragraph 2 below, at the rate of \$8,333.33 per Aircraft for each commercial sale of Model 22 Aircraft from No. 41 through No. 70 for a total reduction of \$250,000 per Aircraft.
2. The Unit Base Price shall be further adjusted as additional commercial sales of Model 22 Aircraft are made beyond the forty (40) Aircraft covered by this Agreement and the agreement with Delta referred to in the Second Whereas Clause hereof, as follows:
 - (i) A reduction of \$5,000 per Aircraft for each commercial sale from No. 41 through No. 100, resulting in an adjusted Unit Base Price of \$3,200,000 at such 100th sale.
 - (ii) A reduction of \$5,000 per Aircraft for each commercial sale from No. 101 through No. 150, resulting in an adjusted Unit Base Price of \$2,900,000 at such 150th sale.
 - (iii) A reduction of \$3,400 per Aircraft for each commercial sale from No. 151 through No. 200, resulting in an adjusted Unit Base Price of \$2,730,000 at such 200th sale.
 - (iv) A reduction of \$1,600 per Aircraft for each commercial sale from No. 201 through No. 250, resulting in an adjusted Unit Base Price of \$2,650,000 at such 250th sale.
 - (v) An appropriate reduction per Aircraft for each commercial sale from No. 251 through No. 1,000, consistent with reasonable accounting procedures on a basis of computation consistent with the principles followed in computing reductions as set out in (i) through (iv) above resulting in an Adjusted Unit Base Price of \$2,500,000 at such 1,000th sale; provided, however:

- (a) that each of the Adjusted Unit Base Prices listed in subparagraphs (i) through (iv) shall in no event become finally effective, nor shall CONVAIR be required to give final effect thereto, if any such Adjusted Unit Base Price would operate to reduce the combined total price of all the Model 22 commercial aircraft then sold below the actual cost of such aircraft to CONVAIR as charged or to be charged against the Model 22 commercial program under CONVAIR's usual accounting procedures which shall be in accordance with sound accounting practice; and,
- (b) that each of the Adjusted Unit Base Prices listed in subparagraph (v) above shall in no event become finally effective, nor shall CONVAIR be required to give final effect thereto, if any such Adjusted Unit Base Price would operate to reduce CONVAIR's overall gross profit on all the Model 22 commercial aircraft then sold below six per cent (6%) of the actual cost of such aircraft to CONVAIR as charged or to be charged against the Model 22 commercial program under CONVAIR's usual accounting procedures which shall be in accordance with sound accounting practice; and,
- (c) that the foregoing provisions shall be applied, insofar as the statement of reductions is provided for therein, only pro tanto to the extent and during the period required to avoid violation of the terms of such provision.

It is recognized by the parties hereto that CONVAIR may invoke the provision in paragraph 2 above before or after payment for the aircraft or a portion thereof by Buyer in accordance with Article 3(b) of this Agreement. In

such event, and upon the establishment of facts required to bring such proviso into operation, Buyer shall promptly pay such additional sums for the Aircraft as are determined necessary to give effect to such proviso, but such additional sums shall in no event be payable with respect to any particular Aircraft prior to delivery thereof.

4. The Unit Base Price reductions shown above are without effect on other price elements; i.e., the total purchase price of each of the 30 Aircraft covered by the contract with KEEFES TOOL COMPANY shall consist of the adjusted Unit Base Price increased or decreased as the case may be by specification changes, and other price elements expressly provided by the contract.
5. The term "commercial sales" means any arrangement, firm by ordinary standards prevailing in the aircraft manufacturing industry, under which CONVAIR agrees to deliver Aircraft for commercial use to any other person, firm, corporation or other entity, whether passage of title be involved or pursuant to conditional sale, chattel mortgage, lease, or otherwise; and, subject to the other provisions of this Exhibit A and definitive administrative provisions to be contained in the definitive purchase agreement referred to in Article 4 hereof, the Unit Base Price reductions provided hereby shall become initially effective upon CONVAIR entering into any such arrangement.

The price adjustments contemplated by this Exhibit A have been computed without reference to the possibility of sales of Model 22 type aircraft to the United States Military Forces. The effect of any such sales as a possible element of price adjustment has been the subject of preliminary discussions between the parties and it is mutually agreed that the matter shall be further analyzed and resolved incidental to development of the definitive purchase agreement and appropriate provisions regarding such resolution shall be contained therein. CONVAIR shall promptly notify Buyer of any Model number change which, because of fundamental dissimilarity of the new model from prior production, in CONVAIR's opinion would operate to exclude aircraft of the new Model from the price adjustment provisions contained in Article 3 and Exhibit A hereto, and CONVAIR and Buyer shall promptly negotiate the effect of such model change upon such price adjustment provisions. Failure of CONVAIR to notify Buyer of any such Model number change within fifteen (15) days after the effective date of such change shall constitute a waiver by CONVAIR of the effect thereof on the aforesaid price adjustment provisions.

7. Notwithstanding any provisions to the contrary elsewhere contained, the final adjusted Unit Base Price of each Aircraft shall in no event exceed the applicable Unit Base Price set out below, in event CONVAIR's total sales, including the forty (40) Aircraft covered by this Agreement and the Agreement with Delta referred to in the second WHEREAS clause hereof, become 150 or greater;

<u>Applicable Unit Base Price</u>	<u>Total Sales</u>
\$3,075,000	150
\$2,805,000	200
\$2,725,000	250

The applicable Unit Base Price for total sales between the total sales numbers above specified shall be computed on an equal, straight line basis; for example, the applicable Unit Base Price in event of total sales of 151 is \$3,059,600; in event of total sales of 152 is \$3,054,200; in event of total sales of 201 is \$2,803,400; etc. The provisions of this paragraph 7 are independent of the provisions of paragraphs 1 and 2 of this Exhibit A and vice versa; i.e., no reduction is applicable pursuant to this paragraph 7 in event total sales are less than 150 nor on account of total sales in excess of 250; and the provisions of paragraph 2 and all matters relating to such provisions have no application to this paragraph 7.

8. Each payment by Buyer, at the time of delivery of an Aircraft and as part of the purchase price thereof, of any sum to whose return Buyer subsequently becomes entitled as representing a reduction in Unit Base Price pursuant to any of the provisions of this Exhibit A shall bear interest at the rate of three and one-half per cent ($3\frac{1}{2}\%$) per annum computed on the basis of a year of 365 days, for the period from the date of such payment to the date of such return. Interest due to Buyer pursuant to this paragraph shall be paid by CONVAIR to Buyer, or credited to Buyer's account, quarterly, as long as it accrues.

TWA Ex. R-5, page 1
(TWA-Toolco Purchase Agreement, May 9, 1960)

HUGHES TOOL COMPANY
Gulf Building
Houston 2, Texas

TWA	R-5
EXHIBIT	
5/2/66	L.G.

May 9, 1960

Trans World Airlines, Inc.
380 Madison Avenue
New York 17, N. Y.

Attention: Mr. A. V. Leslie

Re: Purchase of Boeing Model 707-131 and
707-331 Jet Aircraft and Convair
Model 880 Jet Aircraft

Dear Sirs:

If accepted by you this proposal will state our agreement and understanding concerning the conditions under which Trans World Airlines, Inc. (hereinafter called "TWA") may acquire from Hughes Tool Company (hereinafter called "Hughes") Hughes' interest in Boeing Model 707-131 and Boeing Model 707-331 jet aircraft, Convair Model 880 jet aircraft and spare parts, equipment and provisioning therefor.

1. Hughes hereby agrees to sell to TWA and, subject to the provisions of paragraph 9(c) hereof, TWA agrees to purchase from Hughes two Boeing Model 707-131 jet aircraft, Manufacturer's Serial Nos. 17671 and 17672, FAA Nos. N744TW and N745TW respectively, manufactured by Boeing Airplane Company and one Boeing Model 707-331 jet aircraft, Manufacturer's Serial No. 17679, FAA No. N765TW, manufactured by Boeing Airplane Company under Purchase Agreement No. 9 dated March 19, 1956, as amended, between Boeing Airplane Company and Hughes (hereinafter called the "331 Purchase Agreement").

Upon notice from TWA prior to June 30, 1960, Hughes shall transfer good title to such three aircraft to TWA free

✓ *LS* *Enist*

and clear of all liens and encumbrances. TWA shall pay to Hughes Hughes' net book value of aircraft FAA Nos. N744TW and N745TW on the date title thereto is transferred from Hughes to TWA. As to aircraft FAA No. N765TW, TWA shall pay Hughes Hughes' undepreciated cost with respect to such aircraft.

Upon the acquisition of title thereto by TWA rental under the existing lease from Hughes of aircraft FAA No. N765TW will be cancelled from the beginning. The existing leases on aircraft FAA Nos. N744TW and N745TW and on the aircraft described in Exhibit 2 will be cancelled as of the acquisition of title by TWA. The provisions in paragraph 10(b) of such leases for payments by one party to the other to reflect differences in time since last overhaul of engines shall be inapplicable to all aircraft purchased by TWA hereunder.

As used herein and elsewhere in this agreement Hughes' net book value with respect to any aircraft shall mean the sum of

(i) The amounts Hughes shall have paid Boeing Airplane Company for such aircraft;

(ii) The amounts Hughes shall have paid vendors of customer-furnished equipment thereon;

(iii) All other costs of Hughes, including expenses, in connection with such aircraft, and

(iv) An amount representing interest on items (i), (ii) and (iii), at a rate per annum to be negotiated between the parties prior to the closing of TWA's long-term financing plan (computed on the average amount of the outstanding payments applicable to such aircraft by considering the payments made as outstanding from the respective dates such payments were made and until delivery of such aircraft to TWA under the respective day-to-day leases of such aircraft from Hughes to TWA);

such cost to Hughes to be depreciated (a) as to airframes, over a 10-year life with a 10% residual value, (b) as to JT-3 engines, over a 5-year life with a 10% residual value and (c) as to JT-4 engines, over a 7-year life with a 10% residual value.

2

Handwritten signature

TWA Ex. R-5, page 3
(TWA-Toolco Purchase Agreement, May 9, 1960)

As used herein and elsewhere in this agreement Hughes' undepreciated cost with respect to any aircraft, equipment, spare parts or provisioning shall mean the sum of

(1) The amounts Hughes shall have paid the vendors with respect thereto (including the amounts paid the vendors of customer-furnished equipment with respect to an aircraft);

(ii) All other costs, including expenses, in connection with the aircraft or other property, and

(iii) An amount representing interest on items (1) and (ii) at a rate per annum to be negotiated between the parties prior to the closing of TWA's long-term financing plan (computed on the average amount of the outstanding payments applicable to such aircraft or other property by considering the payments made as outstanding from the respective dates such payments were made and until the acquisition of such aircraft or property by TWA under this agreement).

2. Hughes hereby assigns to TWA the rights of Hughes to acquire from Boeing Airplane Company 2 Boeing Model 707-331 jet aircraft (Manufacturer's Serial Numbers 17685 and 17690) currently being manufactured by Boeing Airplane Company under the 331 Purchase Agreement. Subject to the provisions of paragraph 9(c) hereof, TWA agrees to purchase from the manufacturer pursuant to the 331 Purchase Agreement each such aircraft when manufactured in accordance with the terms of the 331 Purchase Agreement and tendered for delivery pursuant thereto. In exercising such rights to acquire each aircraft TWA shall pay Boeing Airplane Company the balance of the purchase price of said aircraft and shall agree to pay to the

Print

TWA Ex. R-5, page 4
(TWA-Toolco Purchase Agreement, May 9, 1960)

vendors involved the balance due for customer-furnished equipment installed on such aircraft. In addition, TWA shall pay Hughes Hughes' undepreciated cost with respect to such aircraft.

3. Hughes hereby assigns to TWA the rights of Hughes to acquire from General Dynamics Corporation 20 Convair Model 880 jet aircraft currently being manufactured by General Dynamics Corporation under Purchase Agreement, dated as of September 10, 1956, as amended, between General Dynamics Corporation and Hughes (hereinafter called the "880 Purchase Agreement"). The 20 Convair Model 880 jet aircraft covered by such assignment are more specifically described in Exhibit 1 hereto.

Subject to the provisions of paragraph 9(c) hereof, TWA agrees to purchase from the manufacturer pursuant to the 880 Purchase Agreement each such aircraft when manufactured in accordance with the terms of the 880 Purchase Agreement and tendered for delivery pursuant thereto. In exercising such rights to acquire each aircraft TWA shall pay General Dynamics Corporation the balance of the purchase price of said aircraft and shall agree to pay to the vendors involved the balance due for customer-furnished equipment installed on such aircraft. In addition, TWA shall pay Hughes Hughes' undepreciated cost with respect to such aircraft.

4. Hughes hereby confirms that TWA has the exclusive right and privilege to acquire from Hughes the 13 Boeing Model 707-131 jet aircraft and 4 Boeing Model 707-331 jet aircraft heretofore leased to TWA on a day-to-day basis and not covered by paragraph 1 hereof, said aircraft being more specifically described in Exhibit 2 attached hereto. Subject to the provisions of paragraph 9(c) hereof, Hughes will sell and TWA will purchase such 17 aircraft upon the terms and

4

B.S.S.

Kunst

TWA Ex. R-5, page 5
(TWA-Toolco Purchase Agreement, May 9, 1960)

conditions outlined in paragraph 5 hereof.

5. TWA may purchase the aircraft referred to in paragraph 4 hereof by at least two days' notice to Hughes given on or prior to June 30, 1960 and upon payment to Hughes of Hughes' net book value thereof. Hughes agrees that upon such payment by TWA it will transfer to TWA good title to such aircraft, free and clear of all liens and encumbrances.

6. Hughes hereby confirms that TWA has the exclusive right and privilege to acquire from Hughes Hughes' right to acquire from the manufacturers, or Hughes' interest in, as the case may be, the spare engines for the Boeing 331 and Convair 880 jet aircraft, more specifically described in Exhibit 3, and all other spare parts, equipment and provisioning owned or on order by Hughes for the Boeing or Convair jet aircraft (such engines, spare parts, equipment and provisioning hereinafter referred to as the "Spares").

7. Subject to the provisions of paragraph 9(c) hereof, TWA agrees to purchase the Spares from time to time, from the vendors or Hughes, as the case may be, (a) as to Spares of which title has vested in Hughes upon payment to Hughes of Hughes' undepreciated cost and (b) as to the remainder, upon payment of Hughes' undepreciated cost and TWA's agreement to assume all liabilities and obligations of Hughes to the manufacturers applicable to the Spares acquired by TWA, including the payment of any balance of the purchase price. Upon notice from TWA to Hughes, specifying such Spares, Hughes will transfer to TWA good title, free and clear of all liens and encumbrances, to such Spares that are owned by Hughes and all Hughes' rights as to other Spares specified in such notice.

8. Payments from TWA to Hughes pursuant to this agreement up to a total of \$100,000,000 (less the principal amount of \$5,811,000 on TWA's note, due December 1, 1960,

L.S.S.
Russ

TWA Ex. R-5, page 6
(TWA-Toolco Purchase Agreement, May 9, 1960)

held by Hughes, plus interest thereon) may be made by means of subordinated debentures of TWA in the form that such subordinated debentures may be offered to all stockholders of TWA in connection with the proposed financing plan of TWA. Pending the issuance of subordinated debentures in connection with such financing plan, payments from TWA to Hughes pursuant to this agreement shall be made by delivery to Hughes of subordinated notes, on which interest is payable only if earned and on which no principal payment will be made so long as any senior debt is outstanding except out of the proceeds of the sale of subordinated obligations issued under the definitive financing program or of the sale of capital stock. The interest rate on such subordinated notes, and on the subordinated obligations issuable by TWA to Hughes pursuant to agreements between TWA and Hughes dated April 1, 1960 and April 14, 1960, respectively, shall be the same as that agreed upon by TWA and the lending banks for the temporary loans to TWA pending completion of the proposed definitive financing program for TWA.

9. Notwithstanding any of the above provisions it is further agreed that:

(a) This agreement is entered into subject to approval of the Civil Aeronautics Board and until an order has been entered by the Civil Aeronautics Board permitting the transaction covered by this agreement no sums shall be payable by TWA to Hughes hereunder.

(b) This agreement is subject to the necessary consents of the holders of obligations issued by TWA under its outstanding indentures, chattel mortgages and loan agreements. TWA will diligently endeavor to secure such consents, but in the absence of such consents no sums shall be payable by TWA to Hughes hereunder.

L.S.B. *Kunst*

(c) TWA's obligation to make any payment, deliver any subordinated obligations or assume any liabilities or other obligations with respect to the purchase of any aircraft or other property hereunder is in each case subject to completion of financing arrangements (either temporary or definitive) relating thereto completely satisfactory to TWA.

If the foregoing is acceptable to TWA please so wledge by executing and returning the enclosed copy of this letter.

Very truly yours,

HUGHES TOOL COMPANY

By

Raymond W. Sullivan
Vice President

Accepted as of the 9th day
of May, 1960

TRANS WORLD AIRLINES, INC.

By

Robert L. Gilman
Vice President

TWA Ex. R-5, Exhibit 1
(TWA-Toolco Purchase Agreement, May 9, 1960)

Exhibit 1

Description of Convair 880
Jet Aircraft Assigned to TWA

<u>Model 880 Manufacturing Number Assigned by Convair</u>	<u>Month in which Delivery Is Presently Scheduled</u>
10	May
20	"
22	"
24	June
25	"
27	July
28	"
31	"
2	"
32	Aug.
33	"
35	"
3	Sept.
40	"
42	"
14	Oct.
15	"
19	"
6	Nov.
8	"

*B.L.B.**Print*

TWA Ex. R-5, Exhibit 2
(TWA-Toolco Purchase Agreement, May 9, 1960)

Exhibit 2

DESCRIPTION OF AIRCRAFT

Boeing Model 707-131
Jet Aircraft, FAA No.

N731TW
N732TW
N733TW
N734TW
N735TW
N736TW
N737TW
N738TW
N740TW
N739TW
N741TW
N742TW
N743TW

Date of Lease

January 30, 1959
March 17, 1959
March 30, 1959
April 3, 1959
April 18, 1959
April 29, 1959
May 10, 1959
May 13, 1959
May 24, 1959
May 28, 1959
June 13, 1959
July 1, 1959
July 10, 1959

Boeing Model 707-331
Jet Aircraft, FAA No.

N762TW
N761TW
N763TW
N764TW

Date of Lease

November 6, 1959
November 8, 1959
November 17, 1959
December 27, 1959

G.S.B.

Kruis

TWA Ex. R-5, Exhibit 3
(TWA-Toolco Purchase Agreement, May 9, 1960)

Exhibit 3

Description of Spare Engines
to be Assigned to TWA

General Electric Aircraft Engines
Model CJ805 for the Convair 440 Aircraft (1)

30 Model CJ805 aircraft engines being manufactured by General Electric Company under contract with Hughes Tool Company, dated October 1, 1956, said engines to be assigned to TWA in accordance with TWA's needs currently estimated as follows:

May	1
June	8
July 1 to 15	5
July 16 thru 31	2
August	4
September	5
October	4
November	1
	<u>30</u>

Pratt & Whitney Aircraft Engines
Model JT4A (2)

10 Pratt & Whitney aircraft engines Model JT4A on order by Hughes Tool Company from United Aircraft Corporation under contract dated February 14, 1956 and from Boeing Airplane Company under contract dated January 14, 1959, such engines to be assigned to TWA in accordance with its needs currently estimated to be at the rate of one engine per week commencing May 2, 1960.

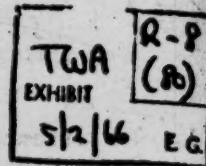
(1) TWA has heretofore succeeded to the interest of Hughes Tool Company in 8 CJ805 engines per telegram agreements dated April 25, 1960. The engines herein described are in addition to the first 8 of such engines covered by the April 25 order.

(2) TWA has heretofore succeeded to the interest of Hughes Tool Company in 25 JT4A engines manufactured by United Aircraft Corporation under contract dated February 14, 1956. The engines herein described are in addition to said 25 engines.

GLH

Pratt

FEDERAL AVIATION AGENCY



CERTIFICATE OF TRUE COPY

I HEREBY CERTIFY that the attached ~~is a true copy~~ ^{are true copies} of the original

aircraft records as described on the attached Schedule A consisting of seven
pages pertaining to Boeing 707-331 aircraft, serial number 17688, registration
number N771TW,

is in the Aircraft Registration Branch, Federal Aviation Agency.

Signed and dated at Oklahoma City, Oklahoma

this 7th day of January, 1966

by Margaret E. Hood

Supervisory Conveyances Examiner
(Title)

I HEREBY CERTIFY that Margaret E. Hood

who signed the foregoing certificate is now, and was, at the time of signing Supervisory Conveyances Examiner, Public Documents Section,
and that full faith and credit should be given his certificate as such.

IN WITNESS WHEREOF, I have hereunto subscribed
my name and caused the seal of the Federal Aviation
Agency to be affixed this 7th day of
January, 1966
at Oklahoma City, Oklahoma

Robert J. Robinson
(Signature)
Chief, Aircraft Registration Branch
(Title)
Data Services Division
(Organization of the Federal Aviation Agency)

SCHEDULE A

1. Certificate of registration issued July 18, 1960, in the name of Trans World Airlines, Inc.
2. Bill of sale recorded July 18, 1960, as document number A121347.
3. Application for registration dated July 1, 1960, in the name of Trans World Airlines, Inc.
4. Letter dated July 1, 1960, from Trans World Airlines, Inc. to Federal Aviation Agency.

FEDERAL AVIATION AGENCY
CERTIFICATE OF REGISTRATIONNATIONALITY AND
REGISTRATION MARKS

N- 771 TW

MAKE AND MODEL OF AIRCRAFT

Boeing 707-331

AIRCRAFT SERIAL NO.

17688

Trans World Airlines, Inc.

NAME OF OWNER

10 Richards Road

ADDRESS OF OWNER—NUMBER AND STREET

Kansas City

Missouri

CITY

ZONE

STATE

THIS
CERTIFICATE
MUST BE
CARRIED IN
THE AIRCRAFT
AT ALL TIMES.

It is hereby certified that the above described aircraft has been duly entered on the register of the Federal Aviation Agency, United States of America, in accordance with the Convention on International Civil Aviation dated 7 December 1944, and with the Federal Aviation Act of 1958, and with the regulations issued thereunder.

ISSUED JUL 18 1960

FOR THE ADMINISTRATOR
Victor C. Forbes
CHIEF, AIRCRAFT & AIRMAN RECORDS BRANCH

JAN 11 1961

A. F.
(OVER)

Forward This Copy and the Duplicate Copy to Washington.

Delivered
to Bruce Mann
in person -
7-18-60

25 -

BILL OF SALE

A 1 2 1 3 4 7

For and in consideration of \$1.00 & other the undersigned owner of the full legal and beneficial title of the aircraft described as follows:

AIRCRAFT MAKE AND MODEL

Boeing 707-331

DOC. RECORDED

SERIAL NO.

17688

REGISTRATION MARK

N-771 TW

50 PM '60

does this 1st day of July 1960 hereby sell, grant, transfer, and deliver all of his right, title and interest in and to such aircraft unto:

HON AGENCY

(Name and address of purchaser—same as on Parts A and B of this form)

Trans World Airlines, Inc.
10 Richards Road
Kansas City, Missouri

and to its executors, administrators, and assigns, to have and to hold singularly the said aircraft forever, and certifies that same is not subject to any mortgage or other encumbrance except

TYPE OF ENCUMBRANCE	AMOUNT	DATE
None	—	—
IN FAVOR OF		

In testimony whereof WE have set OUR hand and seal this 1st day of July 1960

NAME OF SELLER Boeing Airplane Company

BY (SIGN IN INK)

(If completed for co-ownership, all must sign)

TITLE Attorney-in-Fact

(If signed for a corporation, partnership, owner, or agent)

ACKNOWLEDGMENT

State of Washington

County of King

On this 1st day of July 1960 before me personally appeared the above named seller, to me known to be the person described in and who executed the foregoing bill of sale and who acknowledged that he executed the same as his free act and deed, and if said bill of sale be that of a corporation swore that he was duly authorized to execute the same. Given under my hand and official seal the day and year written above.

(SEAL)

BY COMMISSION EXPIRES

NOTARY PUBLIC

FORWARD THIS COPY TO WASHINGTON - Route Envelope Only.

6.03

3
AIRCRAFT AND AIRPORT
RECORDS BRANCH
FAA

JUL 6 10 52 AM '80

WASHINGTON, D.C.

NAME AND ADDRESS OF APPLICANT (same as that shown on Part A of this form)		REGISTRATION MARKS
Trans World Airlines, Inc. 10 Richards Road Kansas City, Missouri		N- 771 TW
CHECK WHETHER OWNERSHIP IS <input checked="" type="checkbox"/> CORPORATION <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> CO-OWNERSHIP <input type="checkbox"/> INDIVIDUAL OWNER		AIRCRAFT MAKE AND MODEL Boeing 707-331
I HEREBY CERTIFY that the above-described aircraft is not registered under the laws of any foreign country; that all persons whose names appear herein as applicants are citizens of the United States as defined in Section 101(15) of the Federal Aviation Act of 1958; that the applicant are the legal owners of the aircraft, or the purchasers under a contract of conditional sale submitted as evidence of ownership for the purpose of registration; and that both copies of Part A and a copy of Part B of Form FAA-300 and legal evidence of ownership were forwarded to the Federal Aviation Agency, Washington, D. C.		SERIAL NO. 17688
Trans World Airlines, Inc. SIGNATURE OF APPLICANT (SEE INSTRUCTIONS) BY: <i>[Signature]</i> (If executed for co-ownership, all must sign)		
TITLE: Attorney-in-Fact <i>[Signature]</i>		
DATE OF APPLICATION: July 1, 1960		
We above statements are true and made in good faith, the aircraft described above may be operated, as registration or notification from the Federal Aviation Agency, provided aircraft requirements of applicable Civil Air Regulations are complied with.		

FORWARD THIS COPY TO WASHINGTON -- Encls. Enclosed Copy.

RECEIVED
FBI
JUN 5 10 52 AM '70
WASHINGTON, D.C.

TWA**TRANS WORLD AIRLINES, Inc.**

Seattle, Washington

JUL 1 1960

Federal Aviation Agency
Examination & Records Division
Home State Life Building
621 N. Robinson
Oklahoma City, Oklahoma

Gentlemen:

Transmitted herewith are the below listed documents in connection with the purchase and registration of Boeing 707-331 airplane Serial No. 17688, Registration No. N771TW.

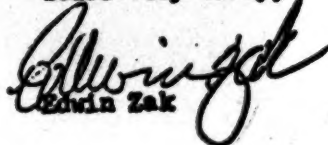
1. Form ACA 500, Part A - original and duplicate
2. Form ACA 500, Part B - original
3. Form ACA 500, Part C - original
4. Power of Attorney, Boeing Airplane Company
5. Power of Attorney, Trans World Airlines, Inc.
6. Check payable to the Federal Aviation Agency in the amount of \$4.00 to pay for the registration and recordation fee.

The \$10.00 fee for registration number reservation has been previously paid.

You are requested to mail the registration certificate to the following address:

Mr. R. M. Dunn
Vice President - Technical Services
Trans World Airlines, Inc.
Mid-Continent International Airport
Kansas City 8, Missouri

Yours very truly,


Edwin Zak

Enclosures

Aagd 7-18-60

ALL CRAFT AND AIRCRAFT
RECORDS BRANCH
FAA

JUL 6 10 52 A.M. '60

WASHINGTON, D. C.

TWA R-8
(81)
EXHIBIT
5/2/66 E.C.

CERTIFICATE OF TRUE COPY

I HEREBY CERTIFY that the attached ^{photostatic copy} _{are true copies} of the original

craft records as described on the attached Schedule A consisting of seven
pages pertaining to Boeing 707-331 aircraft, serial number 17690, registration
number N772TW,

is in the Aircraft Registration Branch, Federal Aviation Agency.

Signed and dated at Oklahoma City, Oklahoma

this 7th day of January, 1966

by Margaret E. Hood

Supervisory Conveyances Examiner
(Title)

I HEREBY CERTIFY that Margaret E. Hood

who signed the foregoing certificate is now, and was, at the time of signing Supervisory Conveyances Examiner, Public Documents Section,

that full and credit should be given his certificate as such.

IN WITNESS WHEREOF, I have hereunto subscribed
my name and caused the seal of the Federal Aviation
Agency to be affixed this 7th day of
January, 1966

at Oklahoma City, Oklahoma

Robert J. Robinson
(Signature)

Chief, Aircraft Registration Branch
(Title)

Data Services Division

(Organization of the Federal Aviation Agency)

TWA Ex. R-8 (81), page 2
(FAA Registration Documents - B707-331, No. N772TW)

SCHEDULE A

1. Certificate of registration issued July 18, 1960, in the name of Trans World Airlines, Inc.
2. Bill of sale recorded July 18, 1960, as document number A121346.
3. Application for registration dated July 1, 1960, in the name of Trans World Airlines, Inc.
4. Letter dated July 1, 1960, from Trans World Airlines, Inc. to Federal Aviation Agency.

AX-73m

TWA Ex. R-8 (81), page 3
(FAA Registration Documents - B707-331, No. N772TW)

FEDERAL AVIATION AGENCY

CERTIFICATE OF REGISTRATION

NATIONALITY AND
REGISTRATION MARKS

N- 772 TW

MAKE AND MODEL OF AIRCRAFT

Boeing 707-331

AIRCRAFT SERIAL NO.

17690

NAME OF OWNER

Trans World Airlines, Inc.

ADDRESS OF OWNER—NUMBER AND STREET

10 Richards Road

CITY

Kansas City, Missouri

ZONE

STATE

THIS
CERTIFICATE
MUST BE
CARRIED IN
THE AIRCRAFT
AT ALL TIMES

It is hereby certified that the above described aircraft has been duly entered on the register of the
Aviation Agency, United States of America, in accordance with the Convention on Inter-
Civil Aviation dated 7 December 1944, and with the Federal Aviation Act of 1958, and
is issued thereunder.

JUL 18 1960

FOR THE REGISTERING OFFICE
CHIEF, AIRCRAFT & AIRMAN RECORDS SECTION

A Copy and the Duplicate Copy to Washington.

A. P.

(OVER)

*Delivered to
Bruce Morrison
in person
7-18-60*

5

0

BILL OF SALE

A-121346

For and in consideration of \$1.00 & other the undersigned owner of the full legal and beneficial title of the aircraft described as follows:

AIRCRAFT MAKE AND MODEL

Boeing 707-331

DOC. RECORDED

SERIAL NO.

17690

REGISTRATION MARKS

N- 772 TW

3 48 PM '60

does this 1st day of July 1960
hereby sell, grant, transfer, and deliver all of his right, title and interest in and to such aircraft unto:

FEDERAL AVIATION AGENCY

(Name and address of purchaser—same as on Parts A and B of this form)

Trans World Airlines, Inc.
10 Richards Road
Kansas City, Missouri

and to its executors, administrators, and assigns, to have and to hold singularly the said aircraft forever, and certifies that same is not subject to any mortgage or other encumbrance except

A OF ENCUMBRANCE

None

AMOUNT

DATE

IN FAVOR OF

In testimony whereof we have set our hand and seal this 1st day of July 1960

NAME OF SELLER Boeing Airplane Company

BY (SIGN IN INK)

S. H. C. on cert

(If requested for co-ownership, all must sign)

TITLE

Attorney-in-Fact

(If signed for a corporation, partnership, owner, or agent)

ACKNOWLEDGMENT

State of Washington

by of King

acknowledged that he executed the same as his free act and deed, and, if said bill of sale is that of a corporation swore that he was duly authorized to execute the same. Given under my hand and official seal the day and year written above.

(SEAL)

On this 1st day of July 1960
before me personally appeared the above named seller, to me known to be the person described in and who executed the foregoing bill of sale

W. H. Miller

NOTARY PUBLIC

MY COMMISSION EXPIRES

Oct 26, 1960

FORWARD THIS COPY TO WASHINGTON—State Department Case.

A.00

TWA Ex. R-8 (81), page 6
(FAA Registration Documents - B707-331, No. N772TW)

AIRCRAFT AND AIRCRAFT
RECORDS DIVISION
FAA

JUL 6 10 52 AM '60
WASHINGTON, D.C.

(FAA Registration Documents - B707-331, No. N772TW)

THE ADDRESS OF APPLICANT (Same as that shown on Part A of this form)		REGISTRATION MARKS
Trans World Airlines, Inc. 10 Richards Road Kansas City, Missouri		N - 772 TW
		AIRCRAFT MAKE AND MODEL
		Boeing 707-331
CHECK WHETHER OWNERSHIP IS		SERIAL NO.
<input checked="" type="checkbox"/> CORPORATION <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> CO-OWNERSHIP <input type="checkbox"/> INDIVIDUAL OWNER		17690
<p>I HEREBY CERTIFY that the above-described aircraft is not registered under the laws of any foreign country; that all persons whose names appear hereon as applicants are citizens of the United States as defined in Section 101(13) of the Federal Aviation Act of 1958; that the applicants are the legal owners of the aircraft, or the purchasers under a contract of conditional sale submitted as evidence of ownership for the purpose of registration; and that both copies of Part A and a copy of Part B of Form FAA-200 and legal evidence of ownership were forwarded to the Federal Aviation Agency, Washington, D. C.</p>		
SIGNATURE OF APPLICANT (IN INK)		By: <u>William J. [Signature]</u>
		(If executed for co-ownership, all must sign)
DATE OF APPLICATION		TITLE
July 1, 1960		Attorney-in-Fact
<p>If the above statements are true and made in good faith, the aircraft described above may be operated, registration or notification from the Federal Aviation Agency, provided aircraft maintenance requirements and applicable Civil Air Regulations are complied with.</p>		

FORWARD THIS COPY TO WASHINGTON - Route Duplicate Copy.

TWA Ex. R-8 (81), page 8
(FAA Registration Documents - B707-331, No. N772TW)

AX-73r

WASHINGTON, D.C.

JUL 6 10 52 AM '80

FAA

FCWA**TRANS WORLD AIRLINES, Inc.**

Seattle, Washington

JUL 1 1960

Federal Aviation Agency
Examination & Records Division
Home State Life Building
621 N. Robinson
Oklahoma City, Oklahoma

Gentlemen:

Transmitted herewith are the below listed documents in connection with the purchase and registration of Boeing 707-331 airplane Serial No. 17690, Registration No. N772TW.

1. Form ACA 500, Part A - original and duplicate
2. Form ACA 500, Part B - original
3. Form ACA 500, Part C - original
4. Power of Attorney, Boeing Airplane Company
5. Power of Attorney, Trans World Airlines, Inc.
6. Check payable to the Federal Aviation Agency in the amount of \$4.00 to pay for the registration and recordation fee.

The \$10.00 fee for registration number reservation has been previously paid.

You are requested to mail the registration certificate to the following address:

Mr. R. M. Dunn
Vice President - Technical Services
Trans World Airlines, Inc.
Mid-Continent International Airport
Kansas City 6, Missouri

Yours very truly,

Edwin Zak
Edwin Zak

Enclosures

Augd 7-18-60
inf

AIRMAIL AND RECORDS
RECORDS BRANCH
FAA

64
+

JUL 6 10 52 AM '60

WASHINGTON, D. C.

TO: DIRECTOR, FAA
FROM: [illegible]
SUBJECT: [illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]

[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

TWA Ex. 3, page 1
(Affidavit of J. B. Connelly)

3	100-1
200-100-1	3
EXHIBIT	
5/2/66	E. G.

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

----- X
TRANS WORLD AIRLINES, INC., :
Plaintiff, :
-against- : STATEMENT OF
HOWARD R. HUGHES, HUGHES TOOL COMPANY : J. B. CONNELLY
and RAYMOND M. HOLLIDAY, : 61 Civ. 2324
Defendants. :
----- X

STATE OF WASHINGTON)
COUNTY OF KING) ss.:

J.B. Connelly being duly sworn, deposes and says:

I am Vice President - Assistant General Manager of The Boeing Company, Airplane Division, and am familiar with the development, production, sales and deliveries of commercial jet aircraft by The Boeing Company during the period 1954 to 1961 and, in particular, the jet aircraft known as the Boeing 707-120 Series and the Boeing 707-320 Series.

I participated in or was generally familiar with the negotiations between Boeing and Pan American World Airways in 1955 and thereafter concerning the sale to Pan American of Boeing 707-120 and Boeing 707-320 jet aircraft. I also participated in or was generally familiar with the negotiations between Boeing and American Airlines in 1955 and thereafter respecting the sale to American of Boeing 707-120 jet aircraft.

I am familiar with the policies followed by Boeing concerning the sale of commercial jet aircraft to commercial air carriers throughout the period 1955 to 1961 and with Boeing's reasons for entering into the agreements with Pan American and American providing for the delivery of jet aircraft to such customers starting in 1958.

I also participated in or was generally familiar with negotiations between Boeing and other air carriers in 1955 and thereafter respecting the sale of Boeing jet aircraft to such customers.

Based upon my knowledge of the foregoing, it would be my testimony that:

1. In 1955, Boeing wished to sell substantial numbers of 707 jet aircraft to TWA. In accordance with its policies, Boeing would have afforded TWA substantially as early delivery positions as those afforded to other customers of comparable interest to Boeing:

- (a) Had TWA commenced negotiations and ordered jet aircraft comparable in number to those ordered by Pan American and American, respectively, at about the same time as such other customers ordered jet aircraft from Boeing, Boeing would have afforded TWA substantial equality in early delivery positions with Pan American and American. Boeing would have sought to provide substantial equality of early delivery positions as between Pan American and TWA

TWA Ex. 3, page 3
(Affidavit of J. B. Connelly)

with respect to jet aircraft useful primarily on international routes and substantial equality of early delivery positions as between American and TWA with respect to jet aircraft useful primarily on domestic routes;

(b) Boeing would have agreed, assuming that TWA had placed such orders, to deliver and would have delivered to TWA Boeing 707-120 and Boeing 707-320 jet aircraft earlier than such aircraft were in fact delivered under the Boeing agreements with Hughes Tool Company, the first of which agreements was not made until after Pan American and American had contracted for delivery of substantial numbers of Boeing 707 jet aircraft;

(c) If there were major differences in configuration and equipment between such customers, such as in the past existed between Pan American, American and TWA, the Boeing and FAA certification flight test programs would limit Boeing's ability to certify more than one configuration of aircraft at a time and this factor would require that some minimum number of aircraft of each type, probably three, would be delivered to one customer before the next received any;

(d) Since Pan American, TWA and American would all have been seeking early delivery positions of the 120 series, Boeing might have

TWA Ex. R-5, Exhibit 3
(TWA-Toolco Purchase Agreement, May 9, 1960)

Exhibit 3

Description of Spare Engines
to be Assigned to TWA

General Electric Aircraft Engines
Model CJ805 for the Convair 440 Aircraft(1)

30 Model CJ805 aircraft engines being manufactured by General Electric Company under contract with Hughes Tool Company, dated October 1, 1956, said engines to be assigned to TWA in accordance with TWA's needs currently estimated as follows:

May	1
June	8
July 1 to 15	5
July 16 thru 31	2
August	4
September	5
October	4
November	1
	<u>30</u>

Pratt & Whitney Aircraft Engines
Model JT4A(2)

10 Pratt & Whitney aircraft engines Model JT4A on order by Hughes Tool Company from United Aircraft Corporation under contract dated February 14, 1956 and from Boeing Airplane Company under contract dated January 14, 1959, such engines to be assigned to TWA in accordance with its needs currently estimated to be at the rate of one engine per week commencing May 2, 1960.

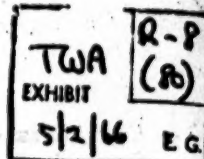
(1) TWA has heretofore succeeded to the interest of Hughes Tool Company in 8 CJ805 engines per telegram agreements dated April 25, 1960. The engines herein described are in addition to the first 8 of such engines covered by the April 25 order.

(2) TWA has heretofore succeeded to the interest of Hughes Tool Company in 25 JT4A engines manufactured by United Aircraft Corporation under contract dated February 14, 1956. The engines herein described are in addition to said 25 engines.

624

Pratt

FEDERAL AVIATION AGENCY



CERTIFICATE OF TRUE COPY

I HEREBY CERTIFY that the attached ~~is a true copy~~ ^{are true copies} of the original

craft records as described on the attached Schedule A consisting of seven
es pertaining to Boeing 707-331 aircraft, serial number 17688, registration
per N771TW,

in the Aircraft Registration Branch, Federal Aviation Agency.

Signed and dated at Oklahoma City, Oklahoma

this 7th day of January, 19 66

by Margaret E. Hood

Supervisory Conveyances Examiner

(Title)

I HEREBY CERTIFY that Margaret E. Hood

who signed the foregoing certificate is now, and was, at the time of signing

Supervisory Conveyances Examiner, Public Documents Section,

and that full faith and credit should be given his certificate as such.

IN WITNESS WHEREOF, I have hereunto subscribed
my name and caused the seal of the Federal Aviation
Agency to be affixed this 7th day of
January, 19 66

at Oklahoma City, Oklahoma

Robert G. Robinson
(Signature)

Chief, Aircraft Registration Branch

(Title)

Data Services Division

(Organization of the Federal Aviation Agency)

SCHEDULE A

1. Certificate of registration issued July 18, 1960, in the name of Trans World Airlines, Inc.
2. Bill of sale recorded July 18, 1960, as document number A121347.
3. Application for registration dated July 1, 1960, in the name of Trans World Airlines, Inc.
4. Letter dated July 1, 1960, from Trans World Airlines, Inc. to Federal Aviation Agency.

FEDERAL AVIATION AGENCY
CERTIFICATE OF REGISTRATIONNATIONALITY AND
REGISTRATION MARKS

N- 771 TW

MAKE AND MODEL OF AIRCRAFT

Boeing 707-331

AIRCRAFT SERIAL NO.

17688

Trans World Airlines, Inc.

NAME OF OWNER

10 Richards Road

ADDRESS OF OWNER—NUMBER AND STREET

Kansas City

Missouri

CITY

ZONE

STATE

THIS
CERTIFICATE
MUST BE
CARRIED IN
THE AIRCRAFT
AT ALL TIMES

It is hereby certified that the above described aircraft has been duly entered on the register of the Federal Aviation Agency, United States of America, in accordance with the Convention on International Civil Aviation dated 7 December 1944, and with the Federal Aviation Act of 1958 regulations issued thereunder.

ISSUED JUL 18 1960

FOR THE ADMINISTRATOR
Robert C. Forbes
CHIEF, AIRCRAFT & AIRMAN RECORDS BRANCH

JAN 11 1961

A. F.
(OVER)

Forward This Copy and the Original Copy to Washington.

*Delivered
to Bruce Mann
in person -
7-18-60*

b - -

AX-736

TWA Ex. R-8 (80), page 5
(FAA Registration Documents - B707-331, No. N771TW) 7

BILL OF SALE

A-121347

For and in consideration of \$1.00 & other the undersigned owner of the full legal and beneficial title of the aircraft described as follows:

AIRCRAFT MAKE AND MODEL

Boeing 707-331

DOC. RECORDED

SERIAL NO.

17688

REGISTRATION MARKS

N- 771 TW

does this 1st day of July 1960
hereby sell, grant, transfer, and deliver all of his right, title and interest in and to such aircraft unto:

50 PM '60

FEDERAL AVIATION AGENCY

(Name and address of purchaser—same as on Parts A and B of this form)

Trans World Airlines, Inc.
10 Richards Road
Kansas City, Missouri

and to its executors, administrators, and assigns, to have and to hold singularly the said aircraft forever, and certifies that same is not subject to any mortgage or other encumbrance except

NAME OF ENCUMBRANCE	AMOUNT	DATE
None		
IN FAVOR OF		

In testimony whereof WE have set OUR hand and seal this 1st day of July 1960

NAME OF SELLER Boeing Airplane Company

BY (SIGN IN INK)

(If signed for co-ownership, all must sign)

TITLE Attorney-in-Fact

(If signed for a corporation, partnership, owner, or agent)

ACKNOWLEDGMENT

State of Washington

County of King

I, King, do hereby acknowledge that he executed the same as his free act and deed, and, if said bill of sale be that of a corporation swore that he was duly authorized to execute the same. Given under my hand and official seal the day and year written above.

On this 1st day of July 1960 before me personally appeared the above named seller, to me known to be the person described in and who executed the foregoing bill of sale.

(SEAL)

MY COMMISSION EXPIRES

NOTARY PUBLIC

FORWARD THIS COPY TO WASHINGTON - Attach Duplicate Copy.

3
AIRCRAFT AND AIRMEN
RECORDS BRANCH
FAA

JUL 6 10 52 AM '80
WASHINGTON, D.C.

AX-73g

TWA Ex. R-8 (80), page 7
 (FAA Registration Documents - B707-331, No. N771TW)

NAME AND ADDRESS OF APPLICANT (Same as that shown on Part A of this form)		REGISTRATION MARKS
Trans World Airlines, Inc. 10 Richards Road Kansas City, Missouri		N- 771 TW
CHECK WHETHER OWNERSHIP IS <input checked="" type="checkbox"/> CORPORATION <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> CO-OWNERSHIP <input type="checkbox"/> INDIVIDUAL OWNER		AIRCRAFT MAKE AND MODEL Boeing 707-331
		SERIAL NO. 17688
<p>I HEREBY CERTIFY that the above-described aircraft is not registered under the laws of any foreign country; that all persons whose names appear herein as applicants are citizens of the United States as defined in Section 101(13) of the Federal Aviation Act of 1958; that the applicants are the legal owners of the aircraft, or the purchasers under a contract of conditional sale submitted as evidence of ownership for the purpose of registration; and that both copies of Part A and a copy of Part B of Form FAA-300 and legal evidence of ownership were forwarded to the Federal Aviation Agency, Washington, D. C.</p>		
<p>Trans World Airlines, Inc. SIGNATURE OF APPLICANT (IN INK) By: <i>[Signature]</i> (If executed for co-ownership, all must sign) <i>[Signature]</i> </p>		
July 1, 1960 DATE OF APPLICATION	TITLE Attorney-in-Fact <i>[Signature]</i>	
<p>If the above statements are true and made in good faith, the aircraft described above may be operated, if registration or notification from the Federal Aviation Agency, provided aircraft meets requirements of applicable Civil Air Regulations are complied with.</p>		

FORWARD THIS COPY TO WASHINGTON - Route Enroute Card.

TWA Ex. 3, page 4
(Affidavit of J. B. Connelly)

selected TWA as the first customer but most probably would have selected Pan American as the first customer for the 120 series, affording Pan American the first three delivery positions. TWA and American would have been afforded substantial equality in early deliveries thereafter, particularly in light of the usefulness of the 120 series over domestic routes. American might have been afforded some preference in light of the reconstruction supplied in paragraph (e) below;

(e) TWA would most probably have been selected as the first customer for the 320 series, particularly in light of Boeing's selection of Pan American as the first customer for the 120 series. TWA would have, in that case, received delivery of the first three 320's and, thereafter, TWA and Pan American would have received substantial equality in early delivery positions.

(f) If TWA would not have compromised delivery positions contemplated in paragraph (e) in order to gain non-essential specific detailed configurations, then the extent of configuration variance that existed between Boeing's standard specification aircraft and the first Pan American 320 actually produced would not have been exceeded by TWA with respect to the cumulative gross effect on production or certification of the 320 (330) series.

TWA Ex. 3, page 5
(Affidavit of J. B. Connelly)

2. The equality of early delivery positions described above would most probably have been provided as follows:

(a) With respect to the 120 series, under the agreements which Boeing probably would have made with Pan American, American and TWA, Boeing would have delivered to Pan American, TWA and American substantially the same number of aircraft approximately by the end of the first six months with substantially equivalent deliveries per month thereafter to American and TWA;

(b) With respect to the 320 series, under the agreements which Boeing probably would have made with Pan American and TWA, Boeing would have delivered to Pan American and TWA substantially the same number of aircraft by the end of the first six month period. The actual deliveries would not have been in exact rotation but would probably have been made on a substantially equal number per month basis.

3. I have examined TWA's Statement of Improvement of Delivery Positions* which reflects a reallocation of certain actual delivery dates of Boeing 707-120 and 707-320 aircraft. The Statement is a reasonable estimate of the improvement in delivery positions which TWA would have obtained, based upon the foregoing. The exact delivery dates which Pan American, TWA and American would have received can, of course, only be estimated. The necessities of Boeing's production line would

* A copy of such Statement is attached as Exhibit A.

TWA Ex. 3, page 6
(Affidavit of J. B. Connelly)

not have permitted Boeing to agree that aircraft would come off the line and be delivered to such customers in an inflexible pari passu sequence, nor would such have been practicable. Rather, deliveries to such customers would have tended over the period of the deliveries to have afforded TWA early delivery positions at least as advantageous as those afforded Pan American and American.

4. With reference to the six Boeing 707-331 jet aircraft which were originally ordered by Toolco, and delivered to Pan American under Pan American's arrangements with Toolco, the earliest delivery positions Pan American could have obtained from Boeing for six 707-331 jet aircraft if such had been ordered in July 1959 from Boeing, in light of the lead time then required, were: one in February, 1961, two in March, 1961, two in April, 1961, and one in May, 1961. These are the same delivery positions as those which, in fact, Boeing offered to TWA at that time.

I have read the foregoing statement and it is true to the best of my knowledge, information and belief.


J. B. CONNELLY

STATE OF WASHINGTON, }
COUNTY OF KING, }

WALTER W. RENSCHLER, County Clerk of King County, and ex-officio Clerk of the Superior Court, of the State of Washington, for the County of King, the same being a Court of Record, and having a Clerk and Seal, do hereby certify that H. H. Carlson the person whose name is subscribed to the annexed acknowledgment, certificate of proof or affidavit, and before whom the same was taken, was at the date thereof, and is now a Notary Public in and for the said State, duly appointed and commissioned; that by virtue of his said office, he is authorized to take acknowledgments and proofs of deeds or conveyances of land, tenements, hereditaments, mortgages and other instruments in writing required to be recorded or acknowledged in said State, and to administer oaths.

I DO FURTHER CERTIFY that I am acquainted with the handwriting of said Notary Public and the name subscribed to the said annexed acknowledgment, certificate or proof or affidavit, is his proper and genuine signature, and the same is executed according to the laws of the State of Washington, which do not require the impression of the seal of such Notary Public to be filed in my office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Court at Seattle, King County, Washington, this 8 day of March A.D. 1966

WALTER W. RENSCHLER, Clerk

By W. J. Anderson Deputy

**REPORT ON
TRANS WORLD AIRLINES, INC.
COMPARATIVE PROFIT STUDY**

1959 - 1963

1964 - 1965

MAY 2, 1966

**COVERDALE & COLPITTS
CONSULTING ENGINEERS
120 WALL STREET
NEW YORK 5, N. Y.**

TWA Ex. 4(b)
(C. & C. Report-Comparative Profit Study)

REPORT ON

TRANS WORLD AIRLINES, INC.

COMPARATIVE PROFIT STUDY

1959 - 1963
1964 - 1965

May 2, 1966

TWA Ex. 4(b), page 1
(C. & C. Report-Comparative Profit Study)

COVERDALE & COLPITTS

JOHN E. SLATER
GEORGE V. T. BURGESS
WILLIAM A. GORDON
SAMUEL R. BROWN
RUSSELL F. PASSANO
EDWARD L. WEMPLE
JOHN C. GARDNER JR.
CHARLES W. GILLESPIE
DONALD A. LOCKHEAD
NORMAN E. CARLSON

GEORGE W. BURPEE
AUGUSTUS P. FARNSWORTH
CONSULTANTS

CONSULTING ENGINEERS

120 WALL STREET

NEW YORK, N.Y. 10005

WILLIAM H. COVERDALE (1904-1948)
WALTER W. COLPITTS (1913-1981)

WHITEHALL 3-7400

CABLE ADDRESS: COVERCOL

May 2, 1966

Cahill, Gordon, Reindel & Ohl
80 Pine Street
New York 5, New York

Dear Sirs:

You have asked us to calculate the extent to which the operating profits earned by Trans World Airlines, Inc. ("TWA") during the years 1959-1963, inclusive, fell short of the profit TWA would have attained had its profits for those years been on the same level, vis-a-vis other air carriers as the profits earned by it during the years 1964 and 1965.

In response to that request, we made a series of computations to determine how TWA's profits during the base years 1964 and 1965 compared with profits during those years of the other air carriers which, in our opinion, are most nearly comparable in operations to TWA. We then calculated the profits TWA would have earned for the years 1959 through 1963 if the ratio of its profits to those of such comparable air carriers had been the same as the ratio of its profits to those of the other carriers during the base years. Having made these computations, we can inform you that, had TWA achieved during the years 1959 through 1963 the profits vis-a-vis comparable air carriers which it reached in 1964 and 1965, its total operating profits during that five-year period would have been greater by approximately \$170 million.

In making our comparisons between TWA and other airlines for purposes of this study, we note that TWA's 1959-1963 route structure was not materially different from what it was in 1964 and 1965, and that the route structures of the airlines we selected for comparison with TWA were also not materially different in 1959-1963 from what they were in 1964-1965.

TWA is unique among airlines in holding certificates of public convenience and necessity which authorize it both to provide international air transportation including transatlantic service and to provide U. S. domestic air transportation including transcontinental service. In order to select other air carriers with operations most nearly comparable to TWA, it is necessary to select both the most comparable air carrier competing with TWA internationally and the most comparable air carrier competing with TWA domestically.

In our opinion, this calculation of operating profit for TWA's International Division must be made on the basis of a comparison with the Atlantic Division of Pan American World Airways, Inc. ("PAA-Atl."). A map showing the routes operated by TWA's International Division and by the Atlantic Division of Pan American World Airways, Inc., and their comparability, is annexed hereto as Exhibit A. The Atlantic Division of Pan American provides the only other scheduled transatlantic air transportation of passengers by a United States flag air carrier.

It is also our opinion that this calculation of operating profit for TWA's Domestic Division operation, in 1964 and 1965 as compared with the period 1959-1963, should rest upon a comparison with American Airlines, Inc. ("American") which we consider to be the air carrier with domestic operation most comparable to TWA's Domestic Division operation. A map showing domestic routes operated by TWA and American and their comparability is annexed hereto as Exhibit B.

TWA Ex. 4(b), page 3
(C. & C. Report-Comparative Profit Study)

The operating profits during the base years 1964 and 1965 of TWA's Domestic and International Divisions and of the air carriers selected by us for purposes of comparison were as follows:

	1964	1965	Average
	(M i l l i o n s)		
TWA International	\$34.6	\$47.6	\$41.1
TWA Domestic	50.9	49.8	50.3
PAA-Atlantic	26.1	33.7	29.9
American (Domestic)	61.2	70.9	66.1

The ratios of TWA's operating profits to those of the air carriers selected for comparison in 1964 and 1965 were as follows:

	1964-1965 Average Operating Profit (Millions)	Ratio, TWA to Other
TWA International PAA-Atlantic	\$41.1 29.9	1.37
TWA Domestic American (Domestic)	\$50.3 66.1	.76

The operating profits (losses) in each of the years 1959 through 1963 of TWA and the selected air carriers were as follows:

	1959	1960	1961	1962	1963	Total
	(M i l l i o n s)					
PAA-Atlantic	\$17.5	\$16.6	\$ 4.5	\$12.5	\$33.3	\$ 84.4
American (Domestic)	24.5	24.7	19.1	19.3	43.9	131.5
TWA International	(-7.8)	17.1	(-13.5)	15.3	23.3	34.4
TWA Domestic	26.3	(-0.9)	(-24.2)	(-7.4)	17.5	11.3

Application of the TWA profit ratios determined for the base years 1964 and 1965 to the total 1959-1963 profits of the selected air carriers, establishes that TWA's profits would have been as set out below if TWA had attained a profit level comparable to that reached by TWA in 1964 and 1965:

AX-85
- 4 -

TWA Ex. 4(b), page 4
(C. & C. Report-Comparative Profit Study)

1959-1963 Profits		1964-1965 Profit Ratio, TWA to Other	Calculated 1959-1963 TWA Profits
	(Millions)		(Millions)
PAA-Atlantic	\$ 84.4	1.37	\$115.6
American (Domestic)	131.5	.76	99.9

The difference between the profits calculated by this method and TWA's actual profits are as follows:

Comparison Airline	Calculated 1959-1963 TWA Profits	Actual TWA Profits		Difference
	(Millions)		(Millions)	
PAA-Atlantic	\$115.6	TWA International	\$34.4	\$ 81.2
American (Domestic)	99.9	TWA Domestic	11.3	88.6
				<u>\$169.8</u>

The operating profits earned by TWA's International Division in the period 1959 through 1963 were about \$81 million less than they would have been if that Division's profit, as compared with PAA-Atl., had been as high as in the years 1964 and 1965. The operating profits earned by TWA's Domestic Division in the period 1959 through 1963 were about \$89 million less than they would have been if that Division's profit, as compared with American, had been as high as in the years 1964 and 1965. These figures are graphically illustrated in Exhibit C hereto.

Respectfully submitted,

Conrad & Colpitts

Consulting Engineers

TWA SYSTEM OPERATING PROFIT

1959 - 1963

CALCULATED
AT 1964-1965
RATIOS TO AMERICAN
AND PAA-ATLANTIC

ACTUAL

\$ 169.8
(MILLIONS)

\$ 45.7
(MILLIONS)

PROPERTY OF THE

VOL 2
1957/1958

TWA Ex. 4(c)(1)
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

**REPORT ON
FINANCIAL RESULTS FROM OPERATIONS
FOR
TRANS WORLD AIRLINES, INC.
1959 - 1963**

MAY 2, 1966

**Volume I
Text**

(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

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COVERDALE & COLPITTS

CONSULTING ENGINEERS

120 WALL STREET

NEW YORK, N.Y. 10005

JOHN E. SLATER
 GEORGE V. T. BURGESS
 WILLIAM A. GORDON
 SAMUEL R. BROWN
 RUSSELL F. PASSANO
 EDWARD L. WEMPLE
 JOHN C. GARDNER, JR.
 CHARLES W. GILLESPIE
 DONALD A. LOCHHEAD
 NORMAN E. CARLSON
 GEORGE W. BURPES
 AUGUSTUS P. FARNSWORTH
 CONSULTANTS

WILLIAM H. COVERDALE (1904-1948)
 WALTER W. COLPITTS (1913-1951)

WHITEHALL 3-7400

CABLE ADDRESS: COVERCOL

May 2, 1966

Cahill, Gordon, Reindel & Ohl
 80 Pine Street
 New York 5, New York

Dear Sirs:

In accordance with your request we have estimated changes that would have occurred in the annual financial gain or loss from operations for Trans World Airlines, Inc., (TWA) for each of the years 1959 through 1963 if the air line had:

- I - Owned the Boeing B-131 and B-331 jet aircraft that were leased in 1959 and 1960.
- II - Received six additional Boeing B-331 aircraft that were, in fact, delivered to Pan American World Airways, Inc. (PAA) in 1959 and 1960.
- III - Received Boeing B-131 and B-331 aircraft on certain earlier dates in 1958-1960.
- IV - Received the fleet of twenty Convair 880 aircraft on the 1959-1960 delivery dates provided in the purchase contract.
- V - Received a fleet of thirty (rather than twenty) Convair 880 aircraft on the 1959-1960 delivery dates provided in the purchase contract.

JET AIRCRAFT AND DATES

In the years 1959-1963, TWA received jet aircraft of the following numbers and general characteristics, on the dates listed in the following table, for passenger service. Certain cargo-only jet aircraft that TWA received are not included in this list or in analyses that follow because the numbers and receipt dates of cargo-only jet aircraft are unchanged by the conditions for the estimates in this report.

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Actual Number of Jet Aircraft and Receipt Dates

Number of Aircraft	Model	Cruising Speed(a)	Range(a) (Miles)	Seats(b)	Dates Received(c)
15	B-131	585 mph	3,300	119	Jan. 1959 to Aug. 1959
12	B-331	600 mph	5,700	142	Nov. 1959 to July 1960
20	CV 880	615 mph	2,994	94	May 1960 to Oct. 1961
4(d)	B-720B	622 mph	4,100	111	July 1961 to Sept. 1961
18	B-131B	622 mph	4,200	119	Mar. 1962 to Oct. 1962
5	B-331B	600 mph	6,000	142	Nov. 1962 to Mar. 1963
6	CV 880	615 mph	2,994	94	July 1963 to Sept. 1963
76+4(d)					

- (a) From the August 1964 Official Airline Guide, World Wide Edition, Typical Performance Section, Page C-1002.
- (b) Normal seating capacity as shown in TWA Passenger Capacities Bulletins numbers 63-502 and 63-102 dated May 29, 1963. Normal seating capacity for B-720B from TWA Sales Management Control Bulletin number 62-107 dated June 28, 1962.
- (c) From TWA Schedules 3-66M.
- (d) These four B-720B aircraft were leased in 1961 and returned in the latter part of 1962.

The above-listed aircraft model numbers that begin with a "B" are model 707 jet aircraft manufactured by the Boeing Airplane Company (Boeing). The final B indicates aircraft equipped with fan-jet engines that have lower fuel consumption and certain other advantages. "CV" identifies aircraft manufactured by the Convair Division of General Dynamics Corporation (Convair).

Only the B-331 and B-331B jet aircraft have sufficient range to be well-suited for TWA's International Division transatlantic flights. These aircraft can perform non-stop scheduled service between New York and Rome, and they also have the speed and range to be good competitive aircraft for non-stop U. S. transcontinental service. The B-720B and B-131B aircraft also are well-suited for non-stop U. S. transcontinental service. The B-131 aircraft were used for non-stop transcontinental service, but their slower speed resulted in a competitive disadvantage. For normal operating conditions, the CV 880 is practically limited to less-than-transcontinental flights without stops. The

flights TWA operated with these jet aircraft and with various piston aircraft are shown in detail by the Employees' Timetables for the years 1959-1963, which are Exhibit A, Volumes II and III of this report.

Additional Jet Aircraft and Earlier Dates

You gave us assumptions as to additional jet aircraft and earlier receipt dates whereby TWA would have had the following jet aircraft fleets.

Number of Aircraft	Model	Cruising Speed	Range (Miles)	Seats	Dates Received
Revised Numbers of Aircraft and/or Receipt Dates(a)					
15	B-131	585 mph	3,300	119	Nov. 1958 to July 1959
18	B-331	600 mph	5,700	142	July 1959 to July 1960
30	CV 880	615 mph	2,994	94	Nov. 1959 to Sept. 1960
Unchanged Numbers and Dates					
4(b)	B-720B	622 mph	4,100	111	July 1961 to Sept. 1962
18	B-131B	622 mph	4,200	119	Mar. 1962 to Sept. 1962
81+4(b)					

- (a) Given to us by Cahill, Gordon, Reindel & Ohl.
(b) These four B-720B aircraft were leased in 1961 and returned in 1962.

Note:

Performance characteristics and normal seating capacities as shown in the preceding table.

These additional aircraft and earlier dates would have revised the numbers and types of jet aircraft TWA would have received by the end of each year through 1963, as follows:

Year	TWA Jet Aircraft Received by the End of Each Year							
	Very Long-Range, Transatlantic and Transcontinental B-331 and B-331B		Non-Stop Transcontinental				Shorter-Range, CV 880	
			Well-Suited, B-720B and B-131B		Usable, B-131			
	Actual	Revised	Actual	Revised	Actual	Revised	Actual	Revised
1958	-	-	-	-	-	2	-	-
1959	4	10	-	-	15	15	-	2
1960	12	18	-	-	15	15	1	30
1961	12	18	4	4	15	15	20	30
1962	14	18	18	18	15	15	20	30
1963	17	18	18	18	15	15	26	30

The total numbers of jet aircraft on hand at the end of each year, actual and revised are:

Year	Jet Aircraft on Hand at the End of Each Year		
	Actual	Revised	Increase
1958	-	2	2
1959	19	27	8
1960	28	63	35
1961	51	67	16
1962	67	81	14
1963	76	81	7

By the end of 1963 there is a relatively small difference between actual and revised numbers of jet aircraft on hand.

Average Number of Jet Aircraft

The average number of jet aircraft available for commercial service is calculated by TWA each month for each type of aircraft. We used these monthly average numbers of aircraft to calculate the annual averages shown in the upper half of the table on the following page and in Exhibit B, Volume IV.

Using revised numbers of jet aircraft and receipt dates as listed on the previous page, we calculated revised monthly and annual average number of jet aircraft TWA would have had available for commercial service. These calculations are shown in Exhibit C. The revised annual average numbers are

(C. & C. Report-Financial Results from Reconstructed Jet Fleet

Year	TWA's Annual Average Number of Jet Aircraft Available for Commercial Service						
	Very Long-Range, Transatlantic and Transcontinental		Non-Stop Transcontinental		Shorter- Range	Total	
			Well-Suited	Usable			
	B-331	B-331B	B-720B	B-131B	B-131		CV 880
	Actual						
1959	0.3	-	-	-	8.9	-	9.2
1960	8.8	-	-	-	15.0	-	23.8
1961	11.7	-	1.4	-	14.8	14.6	42.5
1962	12.0	0.2	3.1	8.2	15.0	20.0	58.5
1963	12.0	4.6	-	18.0	15.0	22.1	71.7
(See Exhibit B for details.)							
	Revised						
1959	2.0	-	-	-	10.3	-	12.3
1960	15.1	-	-	-	15.0	15.4	45.5
1961	17.6	-	1.4	-	14.8	29.7	63.5
1962	18.0	-	3.1	8.2	15.0	30.0	74.3
1963	18.0	-	-	18.0	15.0	30.0	81.0
(See Exhibit C for details.)							

The additional jet aircraft and earlier receipt dates would have given TWA the following increases in annual average number available.

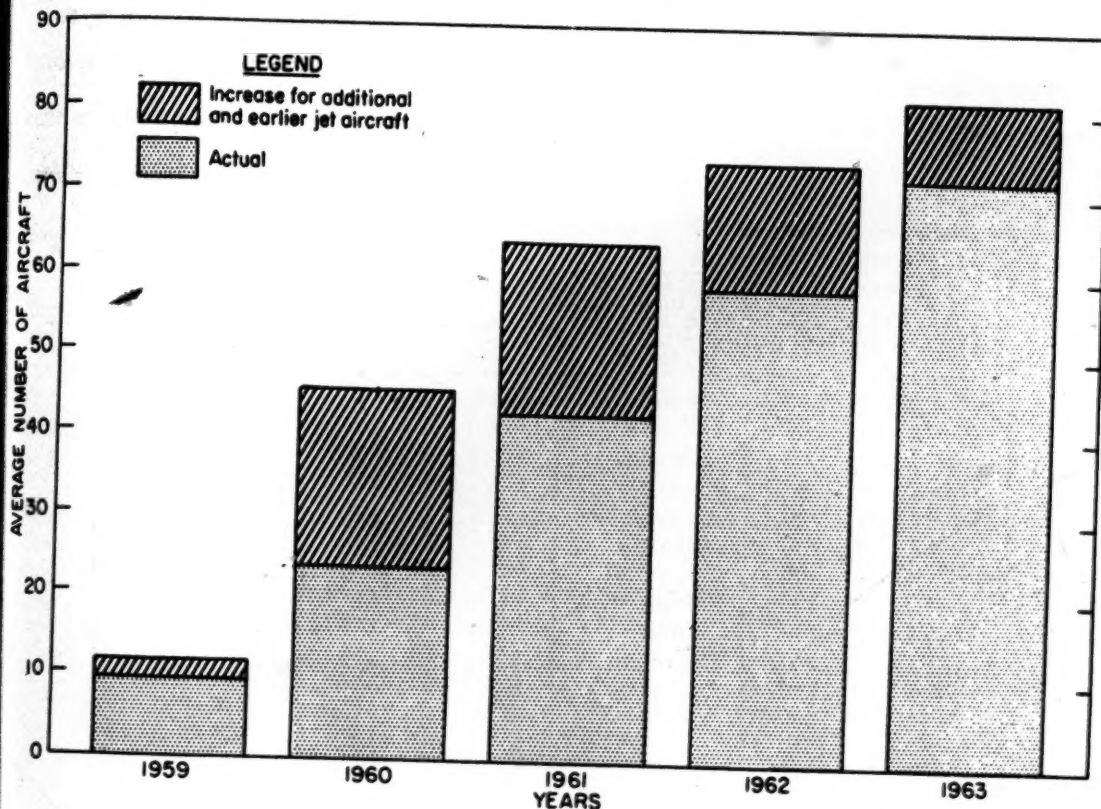
Year	Annual Average Number of Jet Aircraft Available for Commercial Service			
	Actual (a)	Revised (a)	Increase	
			Number (b)	Percent (b)
1959	9.2	12.3	3.1	34%
1960	23.8	45.5	21.7	91
1961	42.5	63.5	21.0	49
1962	58.5	74.3	15.8	27
1963	71.7	81.0	9.3	13

(a) From total columns in preceding table.

(b) By subtraction and calculation.

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Average Number of Jet Aircraft Available for Commercial Service



As shown by the table at the bottom of the previous page and the chart above, the additional and earlier jet aircraft would have given TWA quite substantial increases in the average number of jet aircraft available in the years 1960-1962, and especially in 1960.

LIMIT ON ESTIMATES

With your approval we will limit to the years 1959 through 1963 our estimates of change in financial gain or loss from operations for the additional B-331 and CV 880 aircraft (Chapters II and V that follow) because by the end of 1963 the difference between actual and revised numbers of these types of aircraft is relatively small. Our estimates for aircraft ownership and earlier receipt

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dates (Chapters I, III and IV that follow) will be limited to the years in wh
those changes would have had the principal effect. Accordingly, the years fo
which estimates are prepared are:

	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
I - Ownership of B-131s and B-331s	X	X			
II - Six additional B-331s	X	X	X	X	
III - Earlier receipt of B-131s and B-331s	X	X			
IV - Earlier receipt of twenty CV 880s		X	X		
V - Receipt of thirty CV 880s		X	X	X	

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CHAPTER I

OWNERSHIP OF B-131 AND B-331 AIRCRAFT

This Chapter outlines the development of our estimates of changes in financial results from operations that would have occurred if TWA had owned rather than leased B-131 and B-331 jet aircraft in 1959 and 1960. The receipt dates, leasing and ownership of these aircraft were:

Fleet of Fifteen B-131 Jet Aircraft

Registration Certificate Number	Receipt Date	Leased or Owned on Receipt	Ownership Date
N 731TW	Jan. 29, 1959	Leased	Dec. 30, 1960
N 732TW	Mar. 17, 1959	Leased	Dec. 30, 1960
N 733TW	Mar. 30, 1959	Leased	Dec. 30, 1960
N 734TW	Apr. 3, 1959	Leased	Dec. 30, 1960
N 735TW	Apr. 18, 1959	Leased	Dec. 30, 1960
N 736TW	Apr. 29, 1959	Leased	Dec. 30, 1960
N 737TW	May 10, 1959	Leased	Dec. 30, 1960
N 738TW	May 13, 1959	Leased	Dec. 30, 1960
N 740TW	May 24, 1959	Leased	Dec. 30, 1960
N 739TW	May 28, 1959	Leased	Dec. 30, 1960
N 741TW	June 13, 1959	Leased	Dec. 30, 1960
N 742TW	July 1, 1959	Leased	Dec. 30, 1960
N 743TW	July 10, 1959	Leased	Dec. 30, 1960
N 744TW	July 14, 1959	Leased	May 18, 1960
N 745TW	Aug. 1, 1959	Leased	May 18, 1960

Source:

TWA Official List of Aircraft, Schedule 3-66M, issues of July 31, 1959 and August 31, 1959.

Fleet of Twelve B-331 Jet Aircraft

N 761TW	Nov. 10, 1959	Leased	Dec. 30, 1960
N 762TW	Nov. 10, 1959	Leased	Dec. 30, 1960
N 763TW	Nov. 25, 1959	Leased	Dec. 30, 1960
N 764TW	Dec. 23, 1959	Leased	Dec. 30, 1960
N 765TW	Jan. 18, 1960	Owned	Jan. 18, 1960
N 766TW	Apr. 1, 1960	Owned	Apr. 1, 1960
N 767TW	Apr. 5, 1960	Owned	Apr. 5, 1960
N 768TW	Apr. 14, 1960	Owned	Apr. 14, 1960
N 769TW	May 9, 1960	Owned	May 9, 1960
N 770TW	May 25, 1960	Owned	May 25, 1960
N 771TW	July 1, 1960	Owned	July 1, 1960
N 772TW	July 1, 1960	Owned	July 1, 1960

Source:

TWA Official List of Aircraft, Schedule 3-66M, January 31, 1961.

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The change from lease to ownership of these aircraft would have eliminated rentals expense in the years 1959 and 1960. Such expense for B-131 and B-331 aircraft is shown on Civil Aeronautics Board (CAB) Form 41 reports, Schedule P-5.2, as follows:

Year	Rentals Expense		
	Domestic Division (B-131)	International Division (B-331)	Total
	(M i l l i o n s)		
1959	\$ 7.6	\$0.2	\$ 7.8
1960	12.5	3.9	16.4

Price Waterhouse & Co. advised us that, based on their study of Depreciation and Amortization Expense, the change from leasing to ownership for the fifteen B-131 and twelve B-331 jet aircraft would have altered such non-cash charges in 1959 and 1960 as follows:

Year	Change In Depreciation and Amortization Expense		
	Domestic Division	International Division	System Total
	(M i l l i o n s)		
1959	\$+4.2	\$+0.2	\$+4.4
1960	+6.4	+2.1	+8.5

GAIN OR LOSS FROM OPERATIONS

The changes in Gain or Loss from Operations we calculate for ownership rather than leasing B-131 and B-331 jet aircraft in 1959 and 1960 are summations of the expense changes described above, as follows:

Year	Changes In		Total Improvement In Gain from Operations
	Rentals Expense	Depreciation and Amortization	
	(M i l l i o n s)		
1959	\$ -7.8	\$+4.4	\$3.4
1960	-16.4	+8.5	7.9

CHAPTER II

SIX ADDITIONAL B-331 JET AIRCRAFT

This Chapter outlines the development of our estimates of changes in financial results of operations that would have resulted from TWA having the six additional B-331 jet aircraft that, in fact, were delivered to PAA between November 1959 and June 1960. This would have given TWA eighteen B-331 very long-range jet aircraft as follows:

TWA's Fleet of Twelve B-331 Aircraft and Actual Receipt Dates	
Registration Certificate Number	Date Received(a)
N 761TW	November 10, 1959
N 762TW	November 10, 1959
N 763TW	November 25, 1959
N 764TW	December 23, 1959
N 765TW	January 18, 1960
N 766TW	April 1, 1960
N 767TW	April 5, 1960
N 768TW	April 14, 1960
N 769TW	May 9, 1960
N 770TW	May 25, 1960
N 771TW	July 1, 1960
N 772TW	July 1, 1960

Additional Six B-331 Aircraft, and PAA's Receipt Dates Which are Assumed to be Those for TWA	
Registration Certificate Number	Date Received(b)
N 701	November 5, 1959
N 702	December 15, 1959
N 703	December 30, 1959
N 704	March 23, 1960
N 705	April 29, 1960
N 706	June 8, 1960

- (a) From TWA Official List of Aircraft, Schedule 3-66M dated July 31, 1960.
(b) From CAB Form 41 Report, Schedules B-7, for quarters ending December 31, 1959, March 31, 1960 and June 30, 1960, submitted by PAA.

USE OF B-331 AIRCRAFT

TWA used its twelve B-331 aircraft for commercial service on both International and Domestic Division flights. The International Division flights were primarily transatlantic and the Domestic Division flights generally were U. S. transcontinental as shown in the Employees' Timetables of Exhibit A. The use of B-331 aircraft for service in each Division in the period 1959-1963 is

shown by the annual average number of aircraft available for commercial service for each Division, as follows:

Year	Annual Average Number of B-331 Aircraft Available for Commercial Service(a)		
	International Division	Domestic Division	Total
1959	0.3	-	0.3
1960	6.1	2.7	8.8
1961	7.3	4.4	11.7
1962	9.8	2.2	12.0
1963	9.9	2.1	12.0

(a) From Exhibit B.

Northeast Airlines' Lease

In addition to the above-listed usage of the B-331 aircraft by TWA, commencing in December 1959 and continuing through April 1961 TWA leased time equivalent to about one-half an aircraft to Northeast Airlines, Inc. Northeast flew the aircraft from New York to Miami and return during the time between TWA's New York-Europe flights. For the estimates of this Chapter, we will assume Northeast would have continued to lease only this same amount of aircraft time although additional time might have been available.

Northeast paid TWA for the use of the aircraft and TWA credited against this income the applicable operating expense. The net amount of lease receipts less expense was recorded as Incidental Revenues in TWA's monthly Financial Report.

B-131B Aircraft

TWA's usage of B-331 aircraft changed in 1962 when TWA received and put into operation a fleet of eighteen B-131B aircraft. The B-131B aircraft, like the B-331 aircraft, is well-suited for non-stop U. S. transcontinental service. Reference to the table above shows that in 1962 there was a significant shift of B-331 aircraft from Domestic to International Division service,

as the B-131B aircraft became available to cover Domestic Division flights. For the estimates in this Chapter, we will assume this 1962 shift of B-331 aircraft from Domestic to International Division service occurred at the same time and in the same proportion as the expanded B-331 fleet.

B-331B Aircraft

In December 1962 TWA commenced operating a new fleet of leased B-331B aircraft which are very long-range like the B-331 aircraft (but are equipped with fan-jet engines). The five aircraft of this B-331B fleet were all in service by April 1963. Average usage for each Division was:

Year	Annual Average Number of B-331B Aircraft Available for Commercial Service(a)		
	International Division	Domestic Division	Total
1962	0.1	0.1	0.2
1963	4.3	0.3	4.6

(a) From Exhibit B.

We believe it is reasonable to assume TWA would not have ordered these five B-331B aircraft for delivery in 1962-1963 if TWA had purchased and received the six additional B-331 aircraft in 1959-1960. Accordingly, the service actually operated with B-331B aircraft would have been performed by the additional B-331s.

Additional Number Available

We calculated the additional average number of B-331 aircraft that would have been available for commercial service for the six additional B-331s. This calculation, shown in Exhibit D, was made in accordance with TWA's procedure. The results are:

Year	Additional Annual Average Number of Aircraft Available, for the Six Additional B-331s
1959	0.2
1960	5.0
1961	5.9
1962	6.0 (Including aircraft assigned
1963	6.0 to cover B-331B service)

We apportioned these additional numbers of aircraft to International and Domestic Division service in accordance with the actual usage of B-331 and B-331B aircraft each year. For 1960 and 1961 the apportionment was adjusted to reflect Northeast Airlines' leasing of aircraft time between International Division flights. Details of these calculations are shown in Exhibit D. The resulting apportionment of the six additional B-331s between Divisions is as follows:

Year	Annual Average Number of B-331 Aircraft Available for Commercial Service, for the Six Additional B-331s		
	International Division	Domestic Division	Total
1959	0.2	-	0.2
1960	3.6	1.4	5.0
1961	3.7	2.2	5.9
1962	4.9	1.1	6.0
1963	5.2	0.8	6.0

If the number of B-331B aircraft available in 1962 and 1963 is deducted from the figures above, the following is the net increase in number of very long-range aircraft available for commercial service, resulting from having the six additional B-331s.

1962	4.8	1.0	5.8
1963	0.9	0.5	1.4

In summary, our estimates of these changes in TWA's number of very long-range jet aircraft are:

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Year	Annual Average Number of B-331 and B-331B Aircraft Available for Commercial Service					
	Actual (B-331 and B-331B)			Revised (B-331 Only)		
	International Division	Domestic Division	Total	International Division	Domestic Division	Total
1959	0.3	-	0.3	0.5	-	0.5
1960	6.1	2.7	8.8	9.7	4.1	13.8
1961	7.3	4.4	11.7	11.0	6.6	17.6
1962	9.9	2.3	12.2	14.7	3.3	18.0
1963	14.2	2.4	16.6	15.1	2.9	18.0

Source:

Actual figures are from table on page 11. For 1962 and 1963 the actual figures in table on page 11 are combined with figures shown in table on page 12 to reflect the inclusion of B-331B aircraft available for commercial service. Revised figures are a combination of figures shown in tables on pages 11, 12 and 13.

INTERNATIONAL DIVISION

Most of TWA's operation with the very long-range B-331 and B-331B aircraft, as shown above, was and would have been on International Division service. International Division operations with both jet and piston aircraft in the years 1959-1963 produced the "passenger revenue plane-miles" listed in the table that follows. These are miles an aircraft is flown carrying paying passengers on scheduled flights, extra sections and charter flights. This definition excludes ferry, non-revenue and all-cargo flights. We will use the abbreviated term "plane-miles" in the text and tables that follow.

Year	Plane-Miles, International Division		
	Jet	Piston	Total
	(M i l l i o n s)		
1959	0.3	21.5	21.8
1960	10.7	7.0	17.7
1961	13.0	2.7	15.7
1962	17.4	0.3	17.7
1963	24.4	0.3	24.7

Source:

TWA's December Financial Reports, Schedule 3-2M; the Schedules 3-71M and the October-December 1963 3-453M Reports.

The International Division plane-miles per jet aircraft available were low during the first month of B-331 service, in December 1959, and then were reasonably uniform during the years 1960-1963 as shown in the table that follows. This table shows jet plane-miles for only B-331 and B-331B aircraft (deleting a miscellaneous 0.1 million plane-miles flown in 1959 with B-131 aircraft on International Division charter flights).

Year	International Division		
	Plane-Miles, Jet(a)	Average Number of Jet Aircraft Available B-331 and B-331B(b)	Ratio, Plane-Miles Per Aircraft(c)
	(Millions)		
1959	0.2	0.3	0.67
1960	10.7	6.1	1.75
1961	13.0	7.3	1.78
1962	17.4	9.9	1.76
1963	24.4	14.2	1.72

(a) From table on preceding page, adjusted to only B-331 and B-331B plane-miles.

(b) From Exhibit B and table on page 14.

(c) By calculation.

At these actual ratios of plane-miles per aircraft, TWA would have operated the following additional International Division plane-miles with the additional jet aircraft.

Year	International Division		
	Additional Jet Aircraft Available(a)	Ratio(b)	Additional Jet Plane-Miles(c)
			(Millions)
1959	0.2	0.67	0.1
1960	3.6	1.75	6.3
1961	3.7	1.78	6.6
1962	4.8	1.76	8.4
1963	0.9	1.72	1.5

(a) From Exhibit D and tables on page 13.

(b) From table above.

(c) By calculation.

Reduced Piston Operation

Reference to the table on page 14 shows that in the 1960-1963 period while jet aircraft plane-miles were increasing, International Division piston aircraft plane-miles were reduced to the minimal annual amount of 0.3 million by 1962. With the additional B-331 aircraft to operate more jet aircraft plane-miles in 1960 and 1961, TWA would have reduced piston aircraft operations earlier.

There was in 1960 and for a part of 1961 a special situation whereby TWA operated piston flights in North Africa and at Colombo, Ceylon because it was not feasible to operate jet aircraft at these locations. This service to Colombo (and thence to Bangkok) was terminated in July 1961 and service to North Africa was terminated in October 1961. For this study we assume TWA would have operated weekly piston aircraft flights to Colombo and Bangkok and to North Africa through July and October 1961, respectively, and a connecting weekly piston transatlantic round trip between New York and Rome via Madrid through October 1961, although there would have been enough jet aircraft available to cover this transatlantic flight. Our calculations for this special situation reflect:

- (a) The weekly round trip from New York to Rome via North Africa points and from Rome to Colombo and Bangkok would average approximately 100,000 plane-miles per month.
- (b) The weekly round trip from New York to Rome via North Africa would average about 45,000 plane-miles per month.

Source:

Calculated from TWA Schedule 3-15P showing CAB airport to airport mileages.

There was another special situation in 1960 whereby TWA operated a number of transatlantic charter flights with L-1049H (Lockheed Constellation) aircraft with high-density seating for approximately 100 persons. We will

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assume this special service would have been operated with L-1049H aircraft in 1960 although additional B-331 aircraft were available. In 1960 the International Division recorded:

L-1049H plane-miles 0.4 million

Source:

From Annual Summary of plane-miles shown in Schedules 3-7LM.

For this study we will assume the minimal 0.3 million piston plane-miles that were operated in the years 1962 and 1963 would have been operated then and also in 1960 and 1961 although additional jet aircraft would have been available.

Our estimates of the reductions of piston aircraft plane-miles that would have taken place in 1959-1963 as the result of TWA receiving the additional B-331s are as follows:

Year	Jet Plane-Miles			Piston Plane-Miles			
	Actual (a)	Additional Available (b)	Total (c)	Actual (a)	Special (d)	Required (e)	Estimated Reduction, with Addi- tional Jets (f)
	(M i l l i o n s)						
1959	0.3	0.1	0.4	21.5	-	21.4	0.1
1960	10.7	6.3	17.0	7.0	1.6	0.3	5.1
1961	13.0	6.6	19.6	2.7	0.8	0.3	1.6
1962	17.4	8.4	25.8	0.3	-	0.3	-
1963	24.4	1.5	25.9	0.3	-	0.3	-

- (a) From table on page 14.
- (b) From table on page 15.
- (c) Sum of (a) and (b) under jet plane-miles.
- (d) As discussed above for North Africa, Colombo and L-1049H charter flights.
- (e) For regular and minimal service.
- (f) Actual piston plane-miles minus Special and Required amounts.

These reductions in piston aircraft plane-miles would have been Lockheed L-1649A plane-miles because, as shown by Employees' Timetables in Exhibit A, nearly all International Division piston aircraft scheduled service from December 1959 through 1961 was operated with L-1649A aircraft.

In summary, our estimates of changes in International Division plane-miles are:

Year	Plane-Miles, International Division Operation						
	Actual			Revised			Net Increase
	Jet	Piston	Total	Jet	Piston	Total	
	(M i l l i o n s)						
1959	0.3	21.5	21.8	0.4	21.4	21.8	-
1960	10.7	7.0	17.7	17.0	1.9	18.9	1.2
1961	13.0	2.7	15.7	19.6	1.1	20.7	5.0
1962	17.4	0.3	17.7	25.8	0.3	26.1	8.4
1963	24.4	0.3	24.7	25.9	0.3	26.2	1.5

Source:

The jet and piston columns above are from prior tables; the total and net increase columns are calculated.

Transatlantic Flights

In the period 1960-1963, as TWA operated substantial and increasing amounts of jet aircraft plane-miles on International Division service, the ratio of the number of transatlantic flights to millions of plane-miles was relatively uniform as follows:

Year	Transatlantic Flights (a)	Plane-Miles (b)	Ratio, Flights/ Plane-Miles (c)
(Millions)			
1960	3,347	17.7	189
1961	3,104	15.7	197
1962	3,775	17.7	213
1963	5,094	24.7	206

- (a) Summaries of IATA monthly statistics.
- (b) From table above.
- (c) By calculation.

A proportionate increase of transatlantic flights for the net increase in International Division plane-miles given in the preceding table would have been:

Year	Plane-Miles, International Division			Number of Transatlantic Flights		
	Actual (a)	Revised (a)	Percent Increase (b)	Actual (c)	Increase, At Percent Increase of Plane-Miles (b)	Revised (b)
	(Millions)					
1959	21.8	21.8	-	3,399	-	3,399
1960	17.7	18.9	6.8%	3,347	228	3,575
1961	15.7	20.7	31.8	3,104	987	4,091
1962	17.7	26.1	47.5	3,775	1,793	5,568
1963	24.7	26.2	6.1	5,094	311	5,405

- (a) From table at top of page 18.
(b) By calculation.
(c) Summaries of IATA monthly statistics.

These additional flights would have produced the following additional transatlantic seats for sale by TWA.

Year	Additional Flights(a)	Seats Per B-331 Aircraft(b)	Additional Seats(c)
			(Thousands)
1959	-	-	-
1960	228	130.5	29.8
1961	987	136.2	134.4
1962	1,793	140.0	251.0
1963	311	141.4	44.0

- (a) From table above.
(b) Annual average number of seats per B-331 aircraft calculated from TWA statistics shown in Schedule 3-71M.
(c) By calculation.

There would have been a further increase in TWA's transatlantic seats when jet aircraft replaced piston aircraft because there are more seats in the jet aircraft. The table that follows shows our calculation of this increase in number of seats. (The number of flights for which jet aircraft would have replaced piston aircraft is calculated using a plane-miles ratio.)

(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Year	Actual Flights	Ratio of Plane-Miles for Jets Replacing Pistons, to Total Actual Plane-Miles(a)	Jet Flights Replacing Piston Flights (Actual Flights x Ratio)	Additional Seats In the Jet Aircraft (b)	Additional Seats(c)
					(Thousands)
1959	3,399	0.1/21.8	16	68.7	1.1
1960	3,347	5.1/17.7	964	61.5	59.3
1961	3,104	1.6/15.7	317	62.9	19.9

- (a) From tables on pages 17 and 18.
 (b) Additional annual average number of seats per aircraft (B-331 minus L-1649A) calculated from TWA statistics shown in Schedule 3-71M.
 (c) By calculation.

In summary, the additional transatlantic seats TWA would have had available are:

Year	Additional Seats		
	From Additional Flights With Jets	From Jets Replacing Piston Flights	Total
	(Thousands)		
1959	-	1.1	1.1
1960	29.8	59.3	89.1
1961	134.4	19.9	154.3
1962	251.0	-	251.0
1963	44.0	-	44.0

Source:
 From preceding tables.

IATA Flights and Passengers

We analyzed data on transatlantic flights and passengers for TWA, PAA and the foreign flag carriers that are members of the International Air Transport Association (IATA). We limited this analysis to flights between the U.S.A. and Europe. The number of such transatlantic flights operated each year between the U. S. A. and Europe by TWA, PAA and the foreign flag carriers that are members of IATA, and TWA's percentage of this IATA total are:

TWA Ex. 4(c)(1), page -21-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Year	Transatlantic Flights				TWA's Percent
	TWA	PAA	Foreign	Total	
1958	4,145	6,787	15,120	26,052	15.9%
1959	3,399	4,810	16,522	24,731	13.7
1960	3,347	4,825	15,226	23,398	14.3
1961	3,104	6,373	16,778	26,255	11.8
1962	3,775	7,394	19,098	30,267	12.5
1963	5,094	8,364	20,006	33,464	15.2

Source:

Summaries of IATA monthly statistics.
TWA's percent by calculation.

(The table above and those that follow from IATA data on transatlantic service cover only scheduled passenger flights and extra sections. IATA statistics are not available for charter flights for 1958-1962.)

The transatlantic passengers carried each year by TWA, PAA and the foreign flag air lines, and TWA's percentage of this IATA total are:

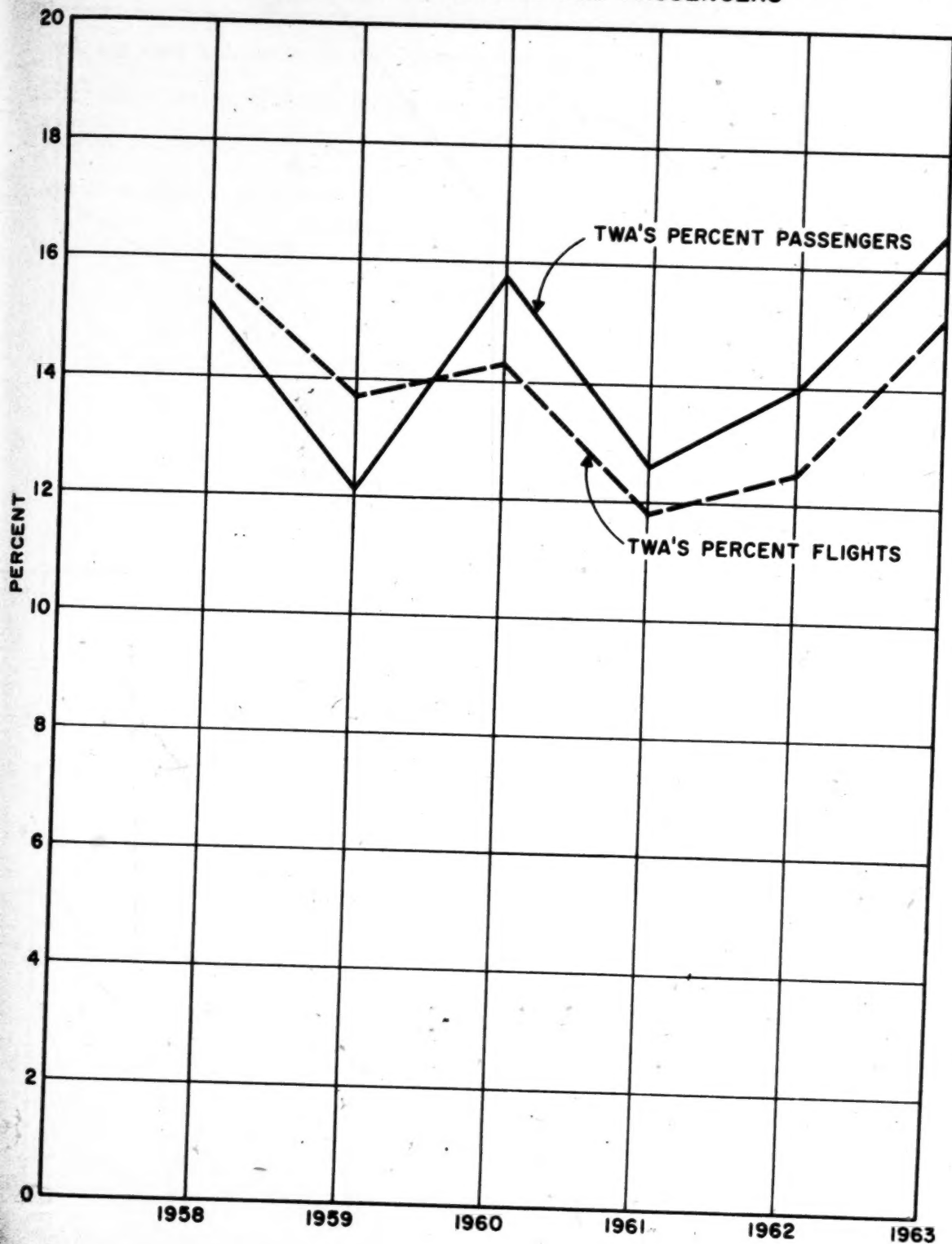
Year	Transatlantic Passengers				TWA's Percent
	TWA	PAA	Foreign	Total	
	(T h o u s a n d s)				
1958	160	278	617	1,055	15.2%
1959	146	336	722	1,204	12.1
1960	243	368	923	1,534	15.8
1961	208	404	1,042	1,654	12.6
1962	277	449	1,255	1,981	14.0
1963	359	539	1,267	2,165	16.6

Source:

Summaries of IATA monthly statistics.
TWA's percent by calculation.

The chart that follows shows that TWA's percentage of IATA passengers varied generally with TWA's percentage of IATA transatlantic flights.

TRANSATLANTIC FLIGHTS AND PASSENGERS



TWA Ex. 4(c)(1), page -23-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

The 1958 and 1959 data points shown on the chart on the preceding page are for essentially an all-piston fleet operation by TWA, although principal competitors were operating jets. Commencing in 1960 TWA's transatlantic operations were primarily with jet aircraft, and from 1960 through 1963 TWA's percentage of transatlantic passengers was slightly higher than its percentage of flights.

Transatlantic Seats

The seats available each year on transatlantic flights by TWA and the other carriers, and TWA's percentages of the IATA totals are:

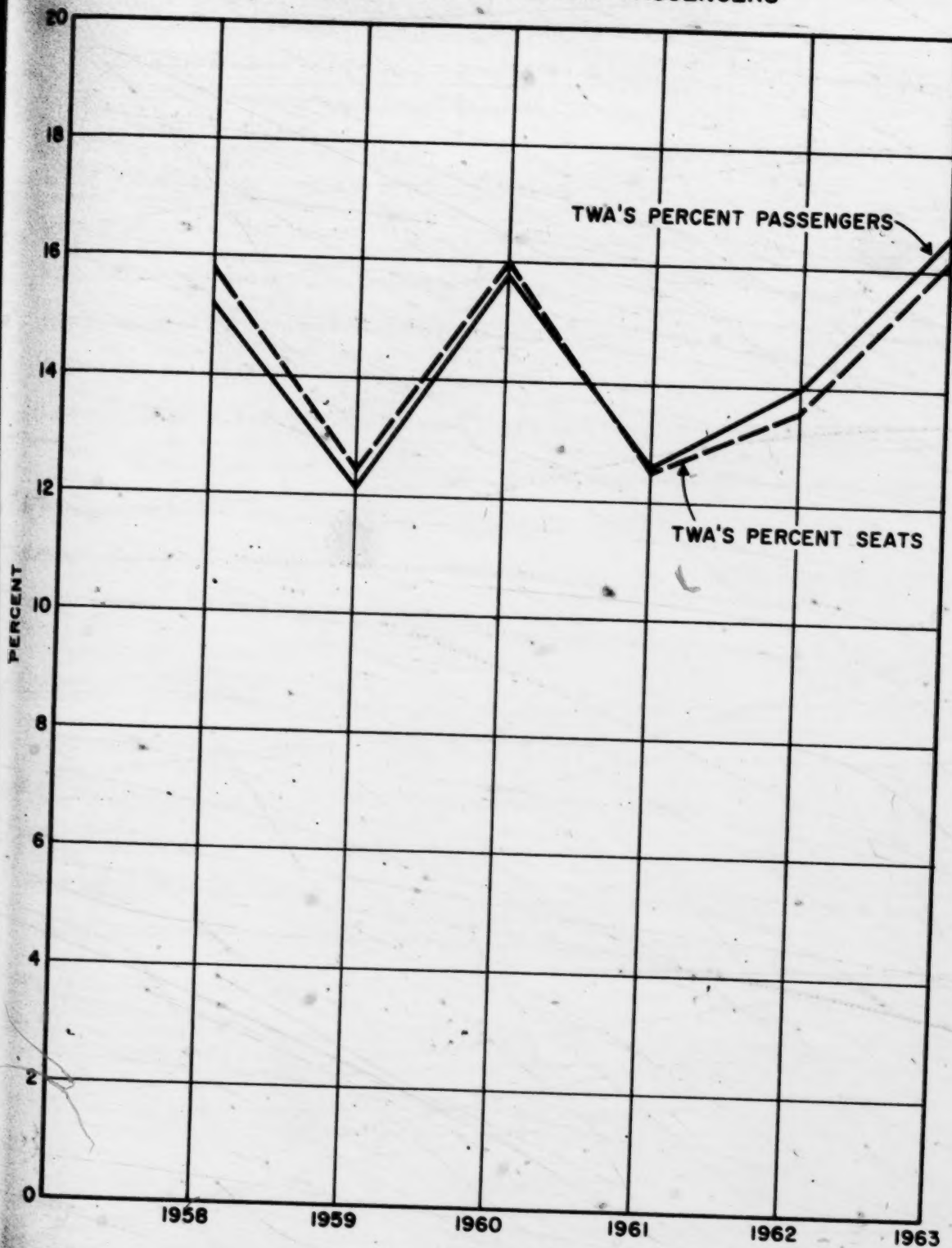
Year	Transatlantic Seats Available				TWA's Percent
	TWA	PAA	Foreign	Total	
	(T h o u s a n d s)				
1958	276	443	1,024	1,743	15.8%
1959	226	427	1,170	1,823	12.4
1960	386	537	1,490	2,413	16.0
1961	412	759	2,115	3,286	12.5
1962	529	906	2,456	3,891	13.6
1963	720	1,071	2,666	4,457	16.2

Source:

Summaries of IATA monthly statistics.
TWA's percent by calculation.

These TWA percentages of IATA seats correlate well with TWA percentages of passengers, as illustrated by the following chart.

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)
TRANSATLANTIC SEATS AND PASSENGERS



As shown by the preceding chart, TWA's percentage of the IATA air lines' passengers is nearly the same as TWA's percentage of the seats available.

Additional Passengers

The foregoing historical evidence for a six-year period is the basis for our calculations that follow for TWA's additional transatlantic passengers in accordance with the additional seats available by operating the additional B-331 aircraft. The jet flights replacing piston flights would have increased the "quality" of TWA's available transatlantic seats. The seats in additional (not replacement) jet flights would have been in aircraft fully competitive with those flown by other transatlantic air lines.

For our calculations of numbers of additional transatlantic passengers TWA would have obtained with the additional jet aircraft, we selected the premise that the total number of transatlantic passengers carried by the IATA air lines would have been unchanged. For 1959 and 1960 we used the premise you gave us that the additional seats offered by TWA would have been, in effect, a transfer of seats from PAA because TWA's additional aircraft would have been transfers from PAA. You advised us that PAA could have obtained replacements in the spring of 1961. For the other years, namely 1961, 1962 and 1963, we selected the premise that the annual total numbers of transatlantic seats available would have been increased by the number of additional seats offered by TWA. We believe these selections, on balance, result in an understatement of the additional number of passengers TWA would have carried. Accordingly, TWA's revised percentages of IATA seats would have been as follows:

Year	Total IATA Seats (Actual)(a)	TWA Seats			IATA Seats, Revised (Except 1959 and 1960)(c)	TWA's Percent of IATA	
		Actual (a)	Increase (b)	Revised (c)		Revised (c)	Actual (d)
		(T h o u s a n d s)					
1959	1,823	226	1	227	1,823(e)	12.5%	12.4%
1960	2,413	386	89	475	2,413(e)	19.7	16.0
1961	3,286	412	154	566	3,440	16.5	12.5
1962	3,891	529	251	780	4,142	18.8	13.6
1963	4,457	720	44	764	4,501	17.0	16.2

- (a) From summaries of IATA monthly statistics.
 (b) From table on page 20.
 (c) By calculation
 (d) From table on page 23.
 (e) Attention is directed to the explanation on page 25.

We calculated TWA's additional passengers in accordance with the changes in TWA's percentages of IATA seats, as follows:

Year	TWA's Percent- ages of IATA Seats Ratio, Revised to Actual(a)	TWA's Percentage of Passengers(b)		IATA Total Passengers (c)	TWA Transatlantic Passengers		
		Actual	Revised		Revised (b)	Actual (c)	Percent Increase (b)
1959	12.5/12.4	12.1%	12.2%	(Thousands)	(Thousands)		
1960	19.7/16.0	12.1%	12.2%	1,204	147	146	1%
1961	16.5/12.5	15.8	19.4	1,534	298	243	23
1962	18.8/13.6	12.6	16.6	1,654	275	208	32
1963	17.0/16.2	14.0	19.3	1,981	382	277	38
		16.6	17.4	2,165	377	359	5

- (a) From table above.
 (b) By calculation.
 (c) From summaries of IATA monthly statistics.

Additional Revenues

These additional transatlantic passengers set forth above would have been accompanied by a proportionate increase in International Division revenues as follows:

TWA Ex. 4(c)(1), page -27-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Year	Actual International Division Passenger Revenue(a) (Millions)	Percent Increase Transatlantic Passengers With Additional B-331 Aircraft(b)	Estimated Additional Passenger Revenue(c) (Millions)
1959	\$ 59.5	1%	\$ 0.6
1960	82.0	23	18.9
1961	63.9	32	20.4
1962	77.5	38	29.5
1963	105.0	5	5.3

(a) From TWA Financial Reports, Schedule 2-2M, and includes passenger revenue from scheduled flights, extra sections, charters and MATS contract operations.

(b) From table on preceding page.

(c) By calculation.

DOMESTIC DIVISION

As set forth on page 13, we estimate that the availability of six additional B-331 aircraft would have given the following net increase in TWA's average number of aircraft available for Domestic Division commercial service.

Year	Additional Average Number of B-331 Available
1960	1.4
1961	2.2
1962	1.0 (After adjustment for
1963	0.5 the B-331B operation)

With these additional B-331 aircraft available in 1960, we believe TWA would have advanced the inauguration date of some longer-distance Domestic Division flights that were operated with B-720B, B-131B and CV 880 aircraft commencing in 1961 and 1962. Some of these earlier inaugurations could have been Domestic "legs" of overseas flights such as Flight 800 which operates from Kansas City to Chicago, New York, Paris and Rome. The Kansas City-Chicago-New York portion of this international flight is classified as Domestic Division service because intra-U. S. A. passengers are carried.

TWA Ex. 4(c)(1), page -28-
(C. & C. Report-Financial Results, from Reconstructed Jet Fleet)

The ratios of the plane-miles operated per average number of B-331 aircraft used for Domestic Division service were as listed below. These ratios and the additional number of aircraft available give the following additional plane-miles.

Year	Actual Operation			Estimated Operation	
	Plane-Miles (a)	Number of Aircraft (b)	Ratio, Million Miles Per Aircraft(c)	Additional Aircraft (d)	Additional B-331 Plane-Miles (c)
	(Millions)				(Millions)
1960	3.8	2.7	1.41	1.4	2.0
1961	6.5	4.4	1.48	2.2	3.3
1962	3.0	2.2	1.36	1.0	1.4
1963	2.8	2.1	1.33	0.5	0.7

(a) From TWA Financial Report (Final), December Schedule 3-1M and Annual Summary of Monthly Operating Statistics, Schedule 3-70M and Report 3-452M.

(b) From Exhibit B.

(c) By calculation.

(d) From tables on pages 13 and 27.

Using actual numbers of seats per aircraft and actual load factors for B-331 aircraft in Domestic Division service, we calculate passenger-miles for the additional jet aircraft operation as follows:

Year	Additional B-331 Plane-Miles(a)	Average Seats Per B-331 Aircraft(b)	Load Factor(c)	Additional Passenger- Miles(d)
	(Millions)			(Millions)
1960	2.0	120.8	64.5%	156
1961	3.3	126.7	49.3	206
1962	1.4	129.2	41.8	76
1963	0.7	139.5	43.1	42

(a) From table above.

(b) These are annual average figures calculated from monthly data in TWA Schedules 3-70M and Reports 3-452M.

(c) These are annual average figures calculated from monthly data of available seat-miles operated and revenue passenger-miles flown in B-331 aircraft, in the same TWA reports.

(d) By calculation.

Piston Aircraft Operation

The Domestic Division piston aircraft operations, measured in terms of plane-miles, decreased from 1958 through 1963 as the jet aircraft operations increased, as follows:

Year	Domestic Division Plane-Miles				
	Piston		Jet		Total Amount (a)
	Amount (a)	Annual Decrease (b)	Amount (a)	Annual Increase (b)	
	(M i l l i o n s)				
1958	94.1	-	-	-	94.1
1959	81.8	12.3	12.4	12.4	94.2
1960	61.5	20.3	26.4	14.0	87.9
1961	35.3	26.2	46.8	20.4	82.1
1962	23.3	12.0	64.6	17.8	87.9
1963	18.6	4.7	78.9	14.3	97.5

(a) From TWA Financial Report (Final), December, Schedule 3-1M and Summary of Monthly Operating Statistics, Schedule 3-70M and Report 3-452M.

(b) By calculation.

Following this pattern of change, we believe the Domestic Division operations with the additional B-331 aircraft would have resulted in a proportionate, further decrease in piston aircraft operations. Our calculation of this further decrease is based on actual ratios of piston plane-miles decrease to jet plane-miles increase, as follows:

Year	Actual Ratio Piston Plane- Miles Decrease/ Jet Increase	Additional Jet Plane-Miles Increase	Additional Piston Plane- Miles Decrease
		(M i l l i o n s)	
1960	20.3/14.0	2.0	2.9
1961	26.2/20.4	3.3	4.2
1962	12.0/17.8	1.4	0.9
1963	4.7/14.3	0.7	0.2

Source:

Righthand column calculated, other figures from preceding tables.

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Using the actual numbers of seats and load factors of TWA's longest-range piston aircraft used in Domestic Division service in 1960-1963, we calculate reduced piston aircraft passenger-miles as follows:

Year	Piston Plane-Miles Reduction(a)	Long-Range Piston Aircraft	Average Number of Seats(b)	Load Factor(c)	Passenger Miles Reduction, Piston Aircraft(d)
	(Millions)				(Millions)
1960	2.9	L-1649A	72.0	58.8%	123
1961	4.2	L-1049G	71.6	60.4	182
1962	0.9	L-1049G	80.1	60.6	44
1963	0.2	L-1049G	79.7	57.5	9

- (a) From table on preceding page.
 (b) Annual averages calculated from monthly data on TWA Schedules 3-70M and Reports 3-452M.
 (c) Annual averages calculated from monthly available seat-miles operated and revenue passenger-miles flown, in the same TWA Reports.
 (d) By calculation.

The net increase in passenger-miles, in accordance with the foregoing, would have been as listed below. Using TWA's annual average "yield" (Domestic Division passenger revenue per passenger-mile), the increase in Domestic Division revenues for the additional B-331 aircraft operations would have been as follows:

Year	Passenger-Miles			Average Revenue (Yield) (d)	Domestic Division Revenue Increase (e)
	Increase In Jets (a)	Decrease In Pistons (b)	Net Increase (c)		
	(Millions)				(Millions)
1960	156	123	33	5.645	\$1.9
1961	206	182	24	5.882	1.4
1962	76	44	32	6.104	2.0
1963	42	9	33	5.845	1.9

- (a) From table on page 28.
 (b) From table above.
 (c) (a) minus (b).
 (d) Calculated by dividing Domestic Division annual passenger revenue shown in TWA Financial Report, Schedule 2-1M, by Domestic Division annual passenger-miles shown in same report, Schedule 3-1M.
 (e) By calculation.

CARGO REVENUES

The TWA System (Domestic and International Divisions combined) has material amounts of revenue from transportation of various types of cargo including mail, express, freight and excess (weight) baggage. Operating revenues from these sources varied from 9 to 12 percent of total operating revenues for the years 1959-1963 as follows:

Year	Domestic Division			International Division			System		
	Cargo Revenue	Total Revenue	% Cargo	Cargo Revenue	Total Revenue	% Cargo	Cargo Revenue	Total Revenue	% Cargo
	(Millions)			(Millions)			(Millions)		
1959	\$19.3	\$273.6	7.1%	\$12.3	\$ 74.7	16.5%	\$31.6	\$348.3	9.1%
1960	21.8	277.1	7.9	16.3	101.0	16.1	38.1	378.1	10.1
1961	23.6	279.6	8.4	17.6	83.3	21.1	41.2	362.9	11.4
1962	24.8	298.8	8.3	23.3	102.1	22.8	48.1	400.9	12.0
1963	29.3	343.4	8.5	26.2	133.1	19.7	55.5	476.5	11.6

Source:

From TWA Financial Reports, Schedules 2-1M and 2-2M; percentages by calculation.

These cargo revenues are for transportation of such items on flights carrying passengers and on the less numerous all-cargo flights. Information is not, however, readily available as to the exact amount of the revenue that is produced by the cargo carried on either passenger or all-cargo flights.

During the 1959-1963 period, as the number of jet aircraft available for commercial service increased, cargo revenue per plane-mile increased as follows:

(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Year	Annual Average Number of Jet Aircraft Available for Commercial Service(a)	System Cargo Revenue(b)	System Plane-Miles (Including Charter and Cargo)(c)	Mail, Express, Freight, Ex- cess Baggage, Revenue Per Plane-Mile(d)
	(M i l l i o n s)			
1959	9.2	\$31.6	119.6	\$0.26
1960	23.8	38.1	110.2	0.35
1961	42.5	41.1	103.4	0.40
1962	58.5	48.1	110.1	0.44
1963	71.8(e)	55.5	127.0	0.44

- (a) From Exhibit B.
- (b) From TWA Financial Reports Schedule 2 M.
- (c) From TWA Financial Reports Schedule 3-1M.
- (d) By calculation.
- (e) 71.7 passenger jets from Exhibit B plus 0.1 all-cargo jet.

With these data showing that revenues from mail, express, freight and excess baggage totaled 9 to 12 percent of System operating revenues and that these revenues increased per plane-mile as jet aircraft replaced piston aircraft, but without suitable data to segregate revenues from cargo carried on all-cargo flights, we selected 5 percent of our estimated additional passenger revenue as reasonable to use to calculate additional mail, express, freight and excess baggage revenues for the six additional B-331 aircraft.

SYSTEM ADDITIONAL REVENUES

The above-described changes in revenues that would have been the result of TWA having six additional B-331 aircraft would have increased TWA's System operating revenues as follows, for the five-year period.

Year	Additional Passenger Revenue With 6 Additional B-331s			Additional Mail, Express, Freight, Excess Baggage Revenue At 5 Percent	Total Additional Revenue With 6 Additional B-331s
	International	Domestic	System		
	(M i l l i o n s)				
1959	\$ 0.6	-	\$ 0.6	-	\$ 0.6
1960	18.9	\$1.9	20.8	\$1.0	21.8
1961	20.4	1.4	21.8	1.1	22.9
1962	29.5	2.0	31.5	1.6	33.1
1963	5.3	1.9	7.2	0.4	7.6

Source:

Estimated additional passenger revenue from tables on pages 27 and 30; other figures were calculated.

OPERATING EXPENSES

The above additional revenues for operating with the additional B-331 aircraft would, logically, have been accompanied by an increase in certain operating expenses.

TWA reports operating expense quarterly and annually on CAB Form 41 reports by type of aircraft for each Division for the following functional classifications and many sub-accounts of each as set up by the CAB for trunk air lines

Flying Operations
Maintenance
 Direct Maintenance
 Applied Maintenance Burden
Depreciation and Amortization

Other expenses are reported quarterly and annually only by Division, not by type of aircraft. Descriptions of the types of expense allocated to each functional classification are set forth in Exhibit E.

We examined detailed expense reports for the period 1959-1963 and selected the sub-account expenses that varied with operations activity. We then calculated, as set forth in Exhibit F, changes in expense that would have taken place if TWA had the six additional B-331 aircraft. The following paragraphs

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

illustrate the methods we used to calculate changes in the variable expenses.
(Certain expenses would not have been changed by the additional B-331 aircraft, such as the President's salary.)

Flying Operations and Maintenance Expense

Flying Operations and Maintenance Expense are those incurred for the operating and maintaining of the aircraft. Some of these expenses varied generally in accordance with changes in plane-miles and number of aircraft available for commercial service with the additional B-331 aircraft. We calculated changes in certain Flying Operations and Maintenance expenses in proportion to the change in plane-miles or number of aircraft available. To illustrate, for Aircraft Fuels expense which is a part of the Flying Operations expense group:

Aircraft Fuels expense for B-331 aircraft used in 1960 for the International Division service was \$5.1 million

Actual B-331 plane-miles in 1960 for International Division service were 10.7 million

Estimated additional B-331 plane-miles in 1960 for International Division service are 6.3 million

Calculation of Aircraft Fuels expense for the additional B-331 operation is by ratio of plane-miles:

$$\$5.1 \times \frac{6.3}{10.7} = \$3.0 \text{ million additional expense}$$

Aircraft Servicing Expense

This expense generally has to do with ground activities for aircraft, and is recorded only by Division (not by type of aircraft). We selected plane-miles as the index to use for our calculation of changes in some of this expense, on the basis that, for example, the estimated net increase of plane-miles operated would have been roughly proportional to the increase in number of flights processed on the ground.

Passenger Service Expense

This expense has to do with passengers while in flight and if the flight is interrupted, and is recorded only for each Division. Expenses for cabin personnel (which are a part of Passenger Service Expense) have varied generally in proportion to plane-miles operated, and expenses for food, supplies and liability insurance have varied generally with passenger revenues. We used changes in plane-miles and passenger revenues to calculate changes in various Passenger Service expenses. To illustrate, for Passenger Food expense which is a part of the Passenger Service Expense group:

Passenger Food expense for the International Division in 1960 was \$1.5 million

Passenger revenues for the International Division in 1960 were \$82.0 million

International Division estimated additional passenger revenues in 1960 with the additional B-331 aircraft are \$18.9 million

Calculation of the International Division Passenger Food expense increase that would have occurred in 1960 with the additional B-331 aircraft is by ratio of passenger revenues:

$$\$1.5 \times \frac{\$18.9}{\$82.0} = \$0.3 \text{ million additional expense}$$

Traffic Servicing Expense

This expense has to do with handling passenger and cargo traffic on the ground, and is recorded only for each Division. We selected transportation revenues (passengers plus cargo) for calculating proportionate changes in expense for most of the Traffic Servicing sub-accounts, which is generally in accordance with TWA's experience.

Servicing Administration Expense

This expense has to do with supervisory and administrative activities for Aircraft Servicing and Traffic Servicing and is recorded only for each Division. We used changes calculated for the Aircraft Servicing and Traffic Servicing expense to calculate a proportionate change in the Servicing Administration expense.

Promotion and Sales Expense

This expense has to do with selling, reservations, city ticket offices, advertising and publicity activities, and is recorded only for each Division. We selected transportation revenues for calculating proportionate changes in principal elements of Promotion and Sales Expense, which is generally in accordance with TWA experience.

General and Administrative Expense

This expense has to do with corporate matters and certain activities such as financial accounting, legal and general operational administration that are not directly applicable to one of the above-listed functional classifications, and is recorded only by Division. We selected transportation revenues to calculate proportionate changes in certain of the General and Administrative Expense sub-accounts. To illustrate, for Record Keeping and Statistical Personnel expense which is a part of the General and Administrative Expense group:

Record Keeping and Statistical Personnel expense in 1960 for the International Division was \$1.4 million

Transportation Revenue for 1960, International Division, was \$98.4 million

A simulated Transportation Revenue increase for the International Division for 1960 with the additional B-331 aircraft is \$19.8 million. This is calculated by apportioning the estimated additional System cargo revenue mentioned on page 33, to each Division, plus the estimated passenger revenue increase

Calculation of additional expense for Record Keeping and Statistical Personnel in 1960 for the International Division is by ratio of Transportation Revenue:

$$\$1.4 \times \frac{\$19.8}{\$98.4} = \$0.3 \text{ million additional expense}$$

Depreciation and Amortization

Price Waterhouse & Co. furnished the changes in this expense.

Summary of Changes

The tables that follow summarize our estimates of changes in TWA Operating Expense that would have occurred with the additional B-331 aircraft.

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Estimated Changes in Operating Expenses That Would
Have Occurred With the Six Additional B-331 Aircraft

Operating Expense	1959		
	International Division	Domestic Division	System
	(Millions)		
Flying Operations	-	No Change	-
Maintenance	\$ +0.2		\$ +0.2
Aircraft Servicing	-		-
Passenger Service	-		-
Traffic Servicing	-		-
Servicing Administration	-		-
Promotion and Sales	+0.1		+0.1
General and Administrative	-		-
Depreciation and Amortization(A)	-		-
	\$ +0.3		\$ +0.3
	1960		
Flying Operations	\$ -0.3	\$ -0.6	\$ -0.9
Maintenance	-1.0	-1.4	-2.4
Aircraft Servicing	+0.2	-0.2	-
Passenger Service	+0.8	-	+0.8
Traffic Servicing	+0.5	+0.1	+0.6
Servicing Administration	+0.1	-	+0.1
Promotion and Sales	+3.0	+0.2	+3.2
General and Administrative	+0.5	+0.1	+0.6
Depreciation and Amortization(A)	+2.7	+1.1	+3.8
	\$ +6.5	\$ -0.7	\$ +5.8
	1961		
Flying Operations	\$ +4.9	\$ -0.8	\$ +4.1
Maintenance	+2.7	-1.4	+1.3
Aircraft Servicing	+1.1	-0.2	+0.9
Passenger Service	+1.9	-	+1.9
Traffic Servicing	+0.7	+0.1	+0.8
Servicing Administration	+0.2	-	+0.2
Promotion and Sales	+4.0	+0.1	+4.1
General and Administrative	+0.8	-	+0.8
Depreciation and Amortization(A)	+3.3	+1.8	+5.1
	\$ +19.6	\$ -0.4	\$ +19.2

(A) Furnished by Price Waterhouse & Co.

Source:
Exhibit F.

(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Operating Expense	1962		
	International Division	Domestic Division	System
	(M i l l i o n s)		
Flying Operations	\$ +8.3	\$+0.7	\$ +9.0
Maintenance	+4.3	+0.3	+4.6
Aircraft Servicing	+1.9	+0.1	+2.0
Passenger Service	+2.9	+0.2	+3.1
Traffic Servicing	+1.0	+0.1	+1.1
Servicing Administration	+0.2	-	+0.2
Promotion and Sales	+5.4	+0.3	+5.7
General and Administrative	+1.0	+0.1	+1.1
Depreciation and Amortization(A)	+3.5	+0.8	+4.3
	\$+28.5	\$+2.6	\$+31.1
	1963		
Flying Operations	\$ -1.3	\$+0.4	\$ -0.9
Maintenance	+2.1	+0.2	+2.3
Aircraft Servicing	+0.3	+0.1	+0.4
Passenger Service	+0.5	+0.2	+0.7
Traffic Servicing	+0.2	+0.1	+0.3
Servicing Administration	-	-	-
Promotion and Sales	+0.9	+0.3	+1.2
General and Administrative	+0.2	-	+0.2
Depreciation and Amortization(A)	+3.0	+0.6	+3.6
	\$ +5.9	\$+1.9	\$ +7.8

(A) Furnished by Price Waterhouse & Co.

Source:

Exhibit F.

GAIN OR LOSS FROM OPERATIONS

The changes in Gain or Loss from Operations that we estimate would have occurred if TWA had received the six additional B-331 aircraft, for the years 1959-1963, are calculated using the foregoing estimates of additional revenue and operating expense, as follows:

TWA Ex. 4(c)(1), page -39-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Year	Additional Revenue(a)	Additional Expense(b)	Improvement In Gain or Loss from Operations(c)
(M i l l i o n s)			
1959	\$ 0.6	\$ 0.3	\$ 0.3
1960	21.8	5.8	16.0
1961	22.9	19.2	3.7
1962	33.1	31.1	2.0
1963	7.6	7.8	<u>-0.2</u>
			\$21.8

(a) From page 33.

(b) From pages 37 and 38.

(c) By subtraction.

TWA Ex. 4(c)(1), page -40-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

CHAPTER III

EARLIER RECEIPT OF B-131 AND B-331 AIRCRAFT

This Chapter outlines the development of our estimates of changes in financial results from operations that would have occurred if TWA had received fifteen B-131 jet aircraft and eighteen B-331 jet aircraft on certain earlier, timely dates as listed below.

Fifteen B-131 Aircraft	
Actual Receipt Dates(a)	Earlier Receipt Dates(b)
January 29, 1959	November 30, 1958
March 17, 1959	December 31, 1958
March 30, 1959	January 31, 1959
April 3, 1959	February 27, 1959
April 18, 1959	March 30, 1959
April 29, 1959	April 3, 1959
May 10, 1959	April 18, 1959
May 13, 1959	May 10, 1959
May 24, 1959	May 13, 1959
May 28, 1959	May 24, 1959
June 13, 1959	May 28, 1959
July 1, 1959	June 13, 1959
July 10, 1959	June 29, 1959
July 14, 1959	July 10, 1959
August 1, 1959	July 27, 1959

(a) From TWA Official List of Aircraft, Schedule 3-66M, issues of July 31, 1959 and August 31, 1959.

(b) Furnished to us by Cahill, Gordon, Reindel & Ohl.

Eighteen B-331 Aircraft	
Actual and Assumed Dates (From page 10)	Earlier Receipt Dates(c)
November 5, 1959	July 19, 1959
November 10, 1959	August 22, 1959
November 10, 1959	August 28, 1959
November 25, 1959	September 22, 1959
December 15, 1959	October 6, 1959
December 23, 1959	October 27, 1959
December 30, 1959	November 5, 1959
January 18, 1960	November 10, 1959
March 23, 1960	December 15, 1959
April 1, 1960	December 30, 1959
April 5, 1960	January 18, 1960
April 14, 1960	February 29, 1960
April 29, 1960	March 23, 1960
May 9, 1960	April 26, 1960
May 25, 1960	April 29, 1960
June 8, 1960	May 9, 1960
July 1, 1960	June 8, 1960
July 1, 1960	July 1, 1960

(c) Furnished to us by Cahill, Gordon, Reindel & Ohl.

COMMENCING REVENUE SERVICE

We estimate these earlier receipt dates would have advanced the dates TWA commenced revenue service with each type of aircraft, as listed below. These estimated dates are based on TWA's experience as to time between receipt dates and commencing service.

	Actual Dates TWA Commenced Revenue Service(a)	Estimated Earlier Dates for Revenue Service
B-131	March 20, 1959	January 6, 1959
B-331	November 23, 1959	August 19, 1959

(a) From TWA Schedule 3-66M dated January 31, 1960.

AVERAGE NUMBER OF AIRCRAFT

We calculated the monthly and annual average number of aircraft available for commercial service for the earlier receipt dates for fifteen B-131 and eighteen B-331 aircraft, as listed in Exhibit C. The annual average number available also are listed below in comparison with actual and other estimated numbers available, for the years affected by the earlier receipt dates.

	1959	
<u>B-131 Aircraft</u>		
Actual average number available (from Exhibit B)	8.9	
Earlier receipt number available (from Exhibit C)	10.3	
Additional number available	1.4	
	1959	1960
<u>B-331 Aircraft</u>		
Actual average number available with a total fleet of twelve aircraft (from Exhibit B)	0.3	8.8
Estimated number available with actual and assumed receipt dates for a total fleet of eighteen aircraft (from page 14)	0.5	13.8
Estimated number available with earlier receipt dates for a total fleet of eighteen aircraft (from Exhibit C)	2.0	15.1
Additional number available (over the number estimated in Chapter II)	1.5	1.3

TWA Ex. 4(c)(1), page -42-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

These B-131 aircraft received on the earlier dates would have been assigned to Domestic Division service as the aircraft were when TWA did receive them. We assigned the earlier B-331 aircraft in 1959 and 1960 to service for the Domestic Division and for the International Division in accordance with TWA's actual Divisional allocation of B-331 aircraft in 1960. This gives aircraft available for each Division and the following additional number of aircraft available.

	Annual Average Number of Aircraft Available for Commercial Service	
	Domestic Division	International Division
<u>B-131 Aircraft, Year 1959</u>		
Actual (Exhibit B)	8.9	-
Estimated for Earlier Receipt (Exhibit C)	10.3	-
Additional Number	1.4	-
<u>B-331 Aircraft, Year 1959</u>		
Estimated for Chapter II (page 14)	-	0.5
Estimated for Earlier Receipt (Exhibit C)	0.6	1.4
Additional Number	0.6	0.9
<u>B-331 Aircraft, Year 1960</u>		
Estimated for Chapter II (page 14)	4.1	9.7
Estimated for Earlier Receipt (Exhibit C)	4.8	10.3
Additional Number	0.7	0.6

DOMESTIC DIVISION

The additional number of jet aircraft available for commercial service in 1959 and 1960 for Domestic Division operation would have been used by TWA to operate a proportionate additional number of plane-miles and to produce corresponding increases in available seats and passenger-miles. Our calculations follow.

1959B-131 Aircraft

12.4 million actual B-131 plane-miles(a) $\times \frac{1.4}{8.9}$ ratio of additional number of aircraft to actual number of aircraft = 1.9 million additional B-131 plane-miles.

1.9 additional B-131 plane-miles \times 111.6 seats per aircraft(b) \times 83.1% actual B-131 passenger load factor(b) = 176 million additional passenger-miles in B-131 aircraft with early receipt dates.

(a) TWA Financial Report, December 1959, Schedule 3-1M.

(b) Calculated from statistics shown in TWA monthly schedules 3-70M for 1959.

We used B-131 statistics for B-331 calculations for 1959 because there were no B-331 aircraft operated in Domestic Division revenue service in that year.

B-331 Aircraft

12.4 million actual B-131 plane-miles(a) $\times \frac{0.6}{8.9}$ ratio of additional number of B-331 aircraft to actual number of B-131 aircraft = 0.8 million additional B-331 plane-miles.

0.8 million additional B-331 plane-miles \times 111.6 seats per B-131 aircraft \times 83.1% actual B-131 passenger load factor = 74 million additional passenger plane-miles in B-331 aircraft with the earlier receipt dates.

(a) TWA Financial Report, December 1959, Schedule 3-1M.

Source:

See calculation immediately above and the table on the previous page.

The total B-131 and B-331 additional plane-miles and passenger-miles for 1959 would have been:

	Additional for 1959	
	Plane-Miles	Passenger-Miles
	(Millions)	
B-131	1.9	176
B-331	0.8	74
Total	2.7	250

1960B-331 Aircraft

5.8 million estimated B-331 plane-miles(a) $\times \frac{0.7}{4.1}$ ratio of additional number of aircraft to estimated number of aircraft = 1.0 million additional B-331 plane-miles.
 1.0 million additional B-331 plane-miles \times 120.8 seats per aircraft(b) \times 64.5% actual load factor(b) = 78 million additional passenger-miles with earlier receipt.

- (a) Calculated from statistics on page 28, i.e., $3.8 + 2.0 = 5.8$.
- (b) Calculated from statistics shown in TWA monthly schedules 3-70M for 1960.

Piston Plane-Miles

We believe the above-described additions of jet aircraft plane-miles would have been accompanied by proportionate reductions of piston aircraft plane-miles. As noted on page 29, in 1959 the actual piston plane-miles reduction nearly equaled the jet plane-miles addition. In 1960 there was a 20.3 million piston plane-miles decrease versus a 14.0 million jet plane-miles increase. Our calculations of piston aircraft plane-miles reductions for earlier receipt of B-131 and B-331 jet aircraft are as follows:

The 1959 piston aircraft plane-miles reduction would have been equal to the jet plane-miles addition of 2.7 million (page 43)

The 1960 piston aircraft plane-miles reduction would have been:

1.0 million jet plane-miles addition $\times \frac{20.3}{14.0}$ ratio of actual piston plane-miles reduction to jet plane-miles addition = 1.4 million piston aircraft plane-miles reduction for earlier receipt of B-331 aircraft.

Using statistics for L-1649A aircraft which were the longest-range piston aircraft in use in 1959 and 1960, we calculate passenger-miles reductions as follows:

TWA Ex. 4(c)(1), page -45-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)For 1959

2.7 million L-1649A plane-miles reduction x 67.7 average number of seats per aircraft(a) x 70.2% actual passenger load factor(a) = 128 million passenger-miles reduction, for 1959, with earlier receipt of B-131 and B-331 aircraft.

For 1960

1.4 million L-1649A plane-miles reduction x 72.0 average number of seats per aircraft(b) x 58.8% actual passenger load factor(b) = 59 million passenger-miles reduction, for 1960, with earlier receipt of B-331 aircraft.

(a) Calculated from statistics shown in TWA monthly schedules 3-70M for 1959.

(b) Calculated from statistics shown in TWA monthly schedules 3-70M for 1960.

Revenues

These changes in passenger-miles resulting from earlier receipt of B-131 and B-331 aircraft would have affected TWA's Domestic Division passenger revenues as follows:

Year	Passenger-Miles			Yield (c)	Passenger Revenues Increase (b)
	Jet Addition (a)	Piston Reduction (a)	Net Increase (b)		
	(Millions)				(Millions)
1959	250	128	122	5.487¢	\$6.7
1960	78	59	19	5.645¢	\$1.1

(a) From previous pages and above.

(b) By calculation

(c) Calculated as described in note (d) at the bottom of page 30.

INTERNATIONAL DIVISION

The additional number of B-331 jet aircraft available for International Division service with the earlier receipt dates would have given TWA an increase in International Division jet plane-miles for 1960 as follows:

TWA Ex. 4(c)(1), page -46-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

17.0 million B-331 plane-miles estimated on page 17 x $\frac{0.6}{9.7}$ ratio
of additional number of B-331 aircraft to estimated number
from page 14 = 1.1 million additional B-331 plane-miles with
earlier receipt dates.

Our calculation for 1959 uses 1960 statistics because there was so little B-331
actual operation in 1959, i.e., only 0.3 million plane-miles as noted on page 17,
and we believe 1960 B-331 operations are more nearly representative of what TWA
would have done with the additional B-331's in 1959. The calculation is:

$17.0 \text{ million} \times \frac{0.9}{9.7} = 1.6 \text{ million additional B-331 plane-miles}$
(these figures are from the table on page 42 and the 1960
calculation above).

We estimate this 1959 addition of 1.6 million B-331 plane-miles would
have been accompanied by an equal reduction of 1.6 million piston aircraft plane-
miles, leaving the International Division total plane-miles unchanged at 21.8
million (see page 18). We estimate the 1960 addition of 1.1 million B-331 plane-
miles would have been a net addition with no further reduction of piston plane-
miles because of certain irreducible requirements for piston aircraft flights
discussed on pages 16, 17 and 18. Accordingly, the total plane-miles for the
International Division in 1960 would have been increased to 20.0 million (18.9
million mentioned on page 18 + 1.1 million = 20.0 million).

Transatlantic Seats and Passengers

We calculate the additional transatlantic seats available and passen-
gers TWA would have realized in 1959 and 1960 with the earlier receipt of B-331
aircraft, in accordance with the analysis system used in Chapter II for the
International Division estimates, as follows:

1959

In 1959 additional transatlantic seats would have been only from the difference in size of the B-331 jet and L-1649A piston aircraft which would have been replaced. (There would have been no increase in total plane-miles or transatlantic flights.)

3,399 flights $\times \frac{1.6}{21.8}$ ratio of millions additional jet to total plane-miles $\times 68.7$ additional seats per jet aircraft = 17,000 additional transatlantic seats.
(Reference to pages 19, 20 and 46.)

227,000 TWA transatlantic seats as estimated in Chapter II + 17,000 = 244,000 seats with B-331 earlier receipt + 1,823,000 IATA total seats $\times 100 = 13.4\%$ seats for TWA of the IATA total.
(Reference page 26, for calculations above and below.)

$\frac{13.4}{12.5}$ ratio of TWA's percent seats for B-331 earlier receipt to TWA's percent seats estimated in Chapter II $\times 12.2\%$ passengers for TWA of the IATA total passengers as estimated in Chapter II = 13.1% passengers for TWA of the IATA total passengers, with earlier receipt of B-331 aircraft.

1,204,000 IATA passengers $\times 13.1\% = 157,500$ TWA passengers with earlier receipt of B-331 aircraft.

157,500 TWA passengers + 147,000 TWA passengers estimated in Chapter II = 1.07, for a 7% increase in transatlantic passengers with earlier receipt of B-331 aircraft.

(\$59.5 + \$0.6) million passenger revenue from Chapter II $\times 7\% = \$4.2$ million additional revenue with earlier receipt of B-331 aircraft.
(Reference page 27.)

1960

The 1960 increase of 1.1 million B-331 plane-miles with earlier receipt of B-331 aircraft would have increased TWA's transatlantic flights in proportion, and available seats as follows:

3,575 TWA transatlantic flights as estimated in Chapter II $\times \frac{1.1}{18.9}$ ratio of additional millions of plane-miles to millions of plane-miles estimated in Chapter II $\times 130.5$ seats per aircraft = 27,000 additional transatlantic seats with earlier receipt of B-331 aircraft.
(Reference page 19.)

475,000 TWA seats as estimated in Chapter II + 27,000 seats
(previous page) = 502,000 seats.
502,000 seats + 2,413,000 IATA seats x 100 = 20.8% seats for
TWA with earlier receipt of B-331 aircraft.
(Reference page 26.)

$\frac{20.8}{19.7}$ ratio of TWA's percent IATA seats with earlier receipt
of B-331 aircraft to TWA's percent IATA seats estimated in
Chapter II x 19.4% passengers for TWA of the IATA total
passengers as estimated in Chapter II = 20.5% passengers
for TWA with earlier receipt of B-331 aircraft.
(Reference page 26.)

20.5% x 1,534,000 IATA passengers = 314,500 TWA passengers
with earlier receipt of B-331 aircraft.
(Reference page 26.)

314,500 + 298,000 TWA passengers estimated in Chapter II =
1.06 for a 6% increase in TWA transatlantic passengers
with earlier receipt of B-331 aircraft.
(Reference page 26.)

\$82.0 million + \$18.9 million = \$100.9 million TWA passen-
ger revenue estimated in Chapter II x 6% = \$6.1 million
additional passenger revenue with earlier receipt of
B-331 aircraft.
(Reference page 27.)

CARGO REVENUES

Using the 5 percent for additional revenues from various types of
cargo including mail, express, freight and excess baggage, as developed on
pages 31 and 32, we calculate additional revenues from cargo for earlier re-
ceipt of B-131 and B-331 aircraft as follows:

Year	Additional Passenger Revenues			Additional Mail, Express, Freight and Excess Baggage Revenues, at 5%
	Domestic Division (a)	International Division (b)	System (c)	
	(M i l l i o n s)			
1959	\$6.7	\$4.2	\$10.9	\$0.5
1960	1.1	6.1	7.2	0.4

- (a) From page 45.
(b) From page 47 and above.
(c) By calculation.

INCIDENTAL REVENUES

We believe the additional number of B-331 aircraft available for commercial service in 1959 with the earlier receipt dates would have enabled TWA to lease aircraft to Northeast Airlines (as described on page 11) two months earlier beginning October 1, 1959, which would have given TWA some additional Incidental Revenues. Net Incidental Revenues in October and November 1960 from the Northeast lease were \$221,977 (from TWA accounting records); we therefore estimate the additional net Incidental Revenues from this source in October and November 1959 would have been a like amount, \$0.2 million.

SYSTEM REVENUES

Our calculation of the total additional System Operating Revenues that TWA would have realized as the result of earlier receipt of B-131 and B-331 aircraft is as follows:

Year	Additional Passenger Revenues (a)	Additional Cargo Revenues (a)	Additional Incidental Revenues (b)	Total Additional System Operating Revenues with Earlier Receipt of B-131 and B-331 Aircraft
	(M i l l i o n s)			
1959	\$10.9	\$0.5	\$0.2	\$11.6
1960	7.2	0.4	-	7.6

(a) From page 48.

(b) As discussed above.

OPERATING EXPENSES

We estimated changes in Operating Expenses that would have been the result of earlier receipt of B-131 and B-331 aircraft, generally in accordance with the methods and considerations used for Operating Expense estimates for Chapter II. The B-131 and B-331 aircraft would have been owned by TWA on the earlier receipt dates, in accordance with the basic assumption you gave us for

TWA Ex. 4(c)(1), page -50-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Chapter I The calculation details of these Chapter III Operating Expense estimates are set forth in Exhibit G. The table that follows summarizes the estimated changes.

Estimated Changes in Operating Expenses That Would Have
Occurred With Earlier Receipt of B-131 and B-331 Aircraft

Operating Expense	1959		
	Domestic Division	International Division	System
	(M i l l i o n s)		
Flying Operations	\$+0.4	\$-0.2	\$+0.2
Maintenance	-	-0.1	-0.1
Aircraft Servicing	+0.1	-	+0.1
Passenger Service	+0.3	+0.2	+0.5
Traffic Servicing	+0.3	+0.1	+0.4
Servicing Administration	-	-	-
Promotion and Sales	+0.6	+0.7	+1.3
General and Administrative	+0.2	+0.1	+0.3
Depreciation and Amortization(A)	+1.2	+0.8	+2.0
	\$+3.1	\$+1.6	\$+4.7
	1960		
Flying Operations	\$-0.3	\$+1.0	\$+0.7
Maintenance	-0.8	+0.6	-0.2
Aircraft Servicing	-0.1	+0.2	+0.1
Passenger Service	+0.1	+0.4	+0.5
Traffic Servicing	+0.1	+0.2	+0.3
Servicing Administration	-	-	-
Promotion and Sales	+0.1	+1.0	+1.1
General and Administrative	-	+0.2	+0.2
Depreciation and Amortization(A)	+0.8	+0.9	+1.7
	\$-0.1	\$+4.5	\$+4.4

(A) Furnished by Price Waterhouse & Co.

GAIN OR LOSS FROM OPERATIONS

We calculate the changes in financial Gain or Loss from Operations that would have occurred for TWA as the result of earlier receipt of B-131 and B-331 jet aircraft as follows:

TWA Ex. 4(c)(1), page -51-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Year	Additional Revenue(a)	Additional Expense(b)	Improvement In Gain or Loss from Operations(c)
(M i l l i o n s)			
1959	\$11.6	\$4.7	\$6.9
1960	7.6	4.4	3.2

- (a) From page 49.
(b) From page 50.
(c) By subtraction.

CHAPTER IVRECEIPT OF CV 880 AIRCRAFT ON CONTRACT DELIVERY DATES

This Chapter outlines the development of our estimates of changes in financial results of operations that would have occurred if TWA had received its fleet of twenty CV 880 jet aircraft on the delivery dates provided in the purchase contract for the aircraft. These contract delivery dates were earlier than the dates TWA actually received the aircraft, as follows:

Aircraft Received	Aircraft Receipt Dates		Months Difference
	Actual	Contract(a)	
1st	May 18, 1960	November 1959	6
2nd	January 1, 1961	January 1960	12
3rd	January 5, 1961	February 1960	11
4th	January 6, 1961	March 1960	10
5th	January 8, 1961	March 1960	10
6th	January 12, 1961	April 1960	9
7th	January 21, 1961	April 1960	9
8th	February 2, 1961	May 1960	9
9th	February 15, 1961	May 1960	9
10th	March 15, 1961	June 1960	9
11th	March 18, 1961	June 1960	9
12th	March 20, 1961	July 1960	8
13th	April 26, 1961	July 1960	9
14th	May 6, 1961	July 1960	10
15th	May 25, 1961	July 1960	10
16th	June 9, 1961	August 1960	10
17th	July 9, 1961	August 1960	11
18th	August 10, 1961	August 1960	12
19th	September 2, 1961	September 1960	12
20th	October 13, 1961	September 1960	13
			<u>198</u>

(a) Furnished to us by Cahill, Gordon, Reindel & Ohl.

You advised us to assume that with receipt of CV 880 aircraft on the contract delivery dates, TWA would have commenced revenue service with CV 880 aircraft on May 15, 1960. TWA did, in fact, commence CV 880 revenue service eight months later on January 12, 1961, as noted on TWA Schedule 3-66M dated July 31, 1961.

NUMBER OF AIRCRAFT AVAILABLE

We calculated the average number of CV 880 aircraft TWA would have had available for commercial service in 1960 and 1961 with receipt of the aircraft on the contract's dates. We assumed each aircraft would have been received on the 15th of the month specified in the contract. The results of these calculations are shown in the table that follows, in comparison with the actual number available. The table also shows our calculation of the increase in number of aircraft available with receipt on the contract's dates.

Average Number of CV 880 Aircraft Available for Commercial Service						
1960	Actual Receipt	Contract Dates Receipt		1961	Actual Receipt(a)	Contract Dates Receipt
January	None			January	3.6	20.0
February				February	7.3(b)	17.6(b)
March				March	10.4	20.0
April				April	11.6	20.0
May		4.9		May	14.0	20.0
June		10.1		June	15.7	20.0
July		13.2		July	16.7	20.0
August		16.6		August	17.7	20.0
September		19.1		September	18.9	20.0
October		20.0		October	19.6	20.0
November		20.0		November	20.0	20.0
December		20.0		December	20.0	20.0
Annual Average		10.3		Annual Average	14.6	19.8
Increase		10.3		Increase		5.2

(a) From Exhibit B.

(b) Affected by the strike.

Plane-Miles

Using TWA data for 1961 operation of CV 880 aircraft, we calculated the additional CV 880 plane-miles TWA would have operated with receipt of the aircraft on the contract's dates, as follows:

TWA Ex. 4(c)(1), page -54-
(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

For 1961:

TWA did operate 16.5(a) million plane-miles with an average of 14.6(b) CV 880 aircraft available in 1961. (These CV 880 plane-miles were on Domestic Division service, only.) The 5.2(c) increase in number of aircraft that would have been available in 1961 with contract receipt would have given the following proportionate increase in plane-miles.

$$16.5 \times \frac{5.2}{14.6} = 5.9 \text{ million additional plane-miles}$$

(a) Annual summary of figures shown in
Schedule 3-70M for 1961.

(b) Exhibit B, Sheet 1.

(c) Table on previous page.

For 1960:

Using 1961 data on number of aircraft and plane-miles, we calculate a proportionate increase in plane-miles operated in 1960 with CV 880 aircraft as follows:

$$16.5 \times \frac{10.3(\text{previous page})}{14.6} = 11.6 \text{ million plane-miles}$$

Seat-Miles

Using TWA's average number of 88.3(d) seats offered for sale per CV 880 aircraft in 1961, we calculate additional CV 880 seat-miles as follows:

For 1961:

$$5.9 \text{ million plane-miles} \times 88.3 = 521 \text{ million additional seat-miles}$$

For 1960:

$$11.6 \text{ million plane-miles} \times 88.3 = 1,024 \text{ million additional seat-miles}$$

(d) Calculated from annual summaries of statistics shown in Schedules 3-70M

Passenger-Miles

Using TWA's 1961 average CV 880 passenger load factor of 65.5(a) percent, we calculate additional passenger-miles for 1961 in CV 880 aircraft as follows:

$$521 \text{ million seat-miles} \times 65.5\% = 341 \text{ million additional passenger-miles}$$

TWA did not have CV 880 aircraft to operate on commercial service in 1960. TWA did, however, operate with B-131 and B-331 jet aircraft on Domestic Division service in 1960 and these jet aircraft averaged 68.6 percent passenger load factor (calculated from data in CAB Form 41 Report, Schedule T-3, for 1960). Using this actual jet aircraft load factor, we calculate additional passenger-miles for 1960 in CV 880 aircraft as follows:

$$1,024 \text{ million seat-miles} \times 68.6\% = 702 \text{ million additional passenger-miles}$$

(a) Calculated from annual summaries of statistics shown in Schedules 3-70M.

CITIES SERVED

The Employees' Timetables of Exhibit A for the period January 1961-September 1962 show that TWA used CV 880 aircraft to provide service between as many as 30 pairs of cities (U. S.), as shown on the following page.

The summation data at the bottom of the preceding table shows that TWA was operating essentially a full schedule with CV 880 aircraft commencing in September 1961, and operated with this daily westbound schedule of about 34,500 plane-miles through March 1962. We selected the March 1962 daily westbound flight schedule for the analysis that follows.

30 Pairs of Cities

In March 1962 TWA schedules provided daily westbound service with CV 880 aircraft for 30 pairs of cities. These same pairs of cities also were served with other types of aircraft by TWA as follows:

Type of Aircraft	Service to the 30 Pairs of Cities		Average Segment Length (Miles)
	Flight Segments	Daily Westbound Scheduled Plane-Miles	
CV 880 Jets	45	34,547	768
Other Jets	22	18,539	843
All Jets	67	53,086	404
Piston	20	8,070	
Total	87	61,156	

The types of jet and piston aircraft used to serve each pair of cities are shown on the table that follows.

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

These 30 pairs of cities had most of the CV 880 service during the entire period of September 1961-September 1962, as demonstrated by the following:

	Daily Westbound Scheduled Service with CV 880 Aircraft		
	All CV 880 Plane-Miles	The 30 Pairs of Cities	
		CV 880 Plane-Miles	Percent of Total
September 1961	34,540	33,745	98%
December 1961	34,914	34,361	98
March 1962	34,547	34,547	100
June 1962	33,577	29,170	87
September 1962	32,923	30,243	92

We tabulated daily westbound service scheduled for the 30 pairs of cities for three-month intervals beginning with March 1960 through September 1962, with both jet and piston aircraft. This daily service is shown in detail on the following page and is summarized below. The table below also lists the average number of CV 880 aircraft TWA actually has available for commercial service in these months, from Exhibit B.

Year and Month	Daily Westbound Service Between the 30 Pairs of Cities			Average Number of CV 880 Available for Commercial Service
	Jet Aircraft	Piston Aircraft	Total	
	(P l a n e - M i l e s)			
<u>1960</u>				
March	8,354	44,246	52,600	-
June	9,434	45,196	54,630	-
September	11,959	42,027	53,986	-
December	13,745	33,151	46,896	-
<u>1961</u>				
March	26,377	23,957	50,334	10.4
June	38,341	17,943	56,284	15.7
September	49,502	14,569	64,071	18.9
December	53,239	10,150	63,389	20.0
<u>1962</u>				
March	53,086	8,070	61,156	20.0
June	52,257	7,851	60,108	20.0
September	54,457	6,027	60,484	20.0

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Service Increase

It is apparent from the preceding tables that TWA substantially increased the amount of service to the 30 pairs of cities in September 1961 when essentially a full schedule of CV 880 flights was operated. With receipt of the CV 880 aircraft on the contract's delivery dates, TWA could have effected this increase in service by September 1960, a year earlier.

Piston Service Decrease

The preceding table on page 60 shows a decrease of piston aircraft service scheduled for the 30 pairs of cities during the period from introduction to full-schedule operation with CV 880 jet aircraft. The decrease in scheduled piston service from December 1960, the month before the CV 880 aircraft were put into service, to September 1961 when full-schedule operation of CV 880 aircraft commenced and the corresponding jet aircraft service increase were:

	Daily Westbound Scheduled Plane-Miles Between the 30 Pairs of Cities	
	Jet	Piston
December 1960	13,745	33,151
September 1961	49,502	14,569
Change	+35,757	-18,582

The piston service decrease was 52 percent of the jet service increase, calculated as follows:

$$\frac{18.6}{35.8} \times 100 = 52\%$$

Applying this 52 percent factor to the previously calculated additional CV 880 plane-miles (page 54), we calculate the further reduction of piston plane-miles as follows:

For 1961:

5.9(a) million additional CV 880 plane-miles x 52% = 3.1 million reduction of piston aircraft plane-miles

For 1960:

11.6(a) million additional CV 880 plane-miles x 52% = 6.0 million reduction of piston aircraft plane-miles

(a) From page 54.

As shown by data in the table on page 60, the majority of the reduction in piston aircraft scheduled service, between December 1960 and September 1961, was in L-1049G flights. Accordingly, we will use L-1049G statistics for our calculations that follow, as representative of the several types of piston aircraft used for service between the 30 pairs of cities.

Our calculation of passenger-miles for this reduction of piston service is based on TWA's actual average numbers of seats offered for sale in L-1049G piston aircraft,

1960	79.3 Seats
1961	71.6 Seats

Source:

Calculated from annual summaries of information contained in Schedule 3-70M.

and the actual L-1049G average passenger load factors, as follows:

Year	Piston Plane-Miles Deleted (a)	Average Seats Per Aircraft (L-1049G) (b)	Average Passenger Load Factor (L-1049G) (c)	Passenger-Miles for Reduced Piston Service (d)
	(Millions)			(Millions)
1960	6.0	79.3	60.2%	286
1961	3.1	71.6	60.4%	134

(a) From table above.

(b) Calculated from annual summaries of information contained in Schedule 3-70M.

(c) Same as above.

(d) Calculated; $a \times b \times c = d$.

REVENUE INCREASE

These changes in passenger-miles and TWA's actual yields would have given the following passenger revenue increase for receipt of CV 880 aircraft on contract delivery dates.

Year	Passenger-Miles			Yield (c)	Net Increase of Passenger Revenue (d)
	Additional CV 880 (a)	Reduced Piston (a)	Net Increase (b)		
	(M i l l i o n s)				(Millions)
1960	702	286	416	5.645 4	\$23.5
1961	341	134	207	5.882 4	\$12.2

(a) From previous pages 54, 55 and 62.

(b) Calculated.

(c) As explained on previous page 30.

(d) Calculated; $b \times c = d$.

Using the 5 percent additional revenue for various kinds of cargo including mail, express, freight and excess (weight) baggage as mentioned on page 31, we calculate additional revenue for these types of cargo for contract dates receipt of CV 880 aircraft as follows:

Year	Additional Passenger Revenue	Additional Revenue from Various Types of Cargo, at 5%	Additional System Revenue
	(M i l l i o n s)		
1960	\$23.5	\$1.2	\$24.7
1961	\$12.2	\$0.6	\$12.8

OPERATING EXPENSES

We estimated changes in Operating Expenses that would have been the result of TWA receiving its fleet of twenty CV 880 aircraft on the dates specified in the aircraft purchase contract, generally in accordance with the method and considerations used for expense estimates of prior Chapters of this report. The details of these estimates are set forth in Exhibit H. The table below summarizes the estimates.

Estimated Changes in Operating Expenses That Would Have
Occurred if TWA had Received its Fleet of Twenty CV 880
Aircraft on the Dates in the Purchase Contract

Operating Expense	1960	1961
	(M i l l i o n s)	
Flying Operations	\$ +4.4	\$ +2.2
Maintenance	+3.5	+1.6
Aircraft Servicing	+1.1	+0.6
Passenger Service	+1.8	+0.9
Traffic Servicing	+1.4	+0.7
Servicing Administration	+0.1	+0.1
Promotion and Sales	+2.4	+1.3
General and Administrative	+0.6	+0.4
Depreciation and Amortization(A)	+5.4	+2.6
	\$+20.7	\$+10.4

(A) Furnished by Price Waterhouse & Co.

GAIN OR LOSS FROM OPERATIONS

We calculate the change in Gain or Loss from Operations that would have occurred if TWA had received the twenty CV 880 aircraft on the dates provided in the purchase contract, as follows:

Year	Additional Revenue(a)	Additional Expense(b)	Improvement In Gain or Loss from Operations(c)
	(M i l l i o n s)		
1960	\$24.7	\$20.7	\$4.0
1961	\$12.8	\$10.4	\$2.4

- (a) From page 63.
(b) From above.
(c) By subtraction.

As mentioned in Chapter IV, we will base our calculations that follow on each CV 880 aircraft being received on the 15th of the month, and we will follow your instruction that May 15, 1960 would have been the first day of revenue service with CV 880 aircraft.

Our calculation of the additional number of CV 880 aircraft available for commercial service that TWA would have had with the fleet of thirty versus the fleet of twenty described in Chapter IV, is summarized as follows.

Year	Annual Average Number of CV 880 Aircraft Available for Commercial Service			
	20 CV 880s		30 CV 880 (c)	Additional, With 30 CV 880(d)
	With Contract Delivery Dates(a)	Actual (b)		
1960	10.3	-	15.4	5.1
1961	19.8	-	29.7	9.9
1962	-	20.0	30.0	10.0
1963	-	22.1	30.0	7.9

- (a) From page 53.
- (b) From Exhibit B.
- (c) From Exhibit C.
- (d) Difference.

The figure of 22.1 actual aircraft available in 1963 reflects TWA's receipt of six CV 880 aircraft in July-September 1963 (from TWA Schedule 3-66M, September 30, 1963). Our estimates for this Chapter are based on the assumption you gave us that these six 1963 aircraft would have been among the thirty aircraft received in 1959-1960.

PASSENGER-MILES

Our calculation of the additional passenger-miles TWA would have recorded each year with the thirty CV 880s is similar to calculations used for Chapter IV, as follows.

Year	Additional Average Number of CV 880 Air- craft Available With 30 CV 880s (a)	Ratio, Million of Plane-Miles to Aircraft Available	Additional Plane- Miles Per Year(b)	Seats Per Aircraft	Load Factor	Additional CV 880 Passenger- Miles With 30 CV 880s (b)
			(Millions)			(Millions)
1960	5.1	16.5/14.6(c)	5.8	88.3(c)	68.6%(c)	351
1961	9.9	16.5/14.6(c)	11.2	88.3(c)	65.5 (c)	648
1962	10.0	23.2/20.0(d)	11.6	91.9(d)	56.2 (d)	599
1963	7.9	26.4/22.1(d)	9.4	93.9(d)	57.3 (d)	506

(a) From previous page.

(b) By calculation.

(c) See pages 54 and 55 for explanatory discussion of these figures.

(d) Actuals for TWA's CV 880 fleets in these years.

SERVICE WITH THIRTY CV 880 AIRCRAFT

We believe the service operated by TWA with thirty CV 880 aircraft would have been similar to that TWA actually operated with the fleet of twenty commencing in 1961 and with the fleet of twenty-six commencing in 1963. Service operated with the fleet of twenty CV 880 aircraft is illustrated by the schedule of March 1962 with 34,547 plane-miles of daily westbound scheduled flights (see pages 57 and 58). Service operated with twenty-six aircraft is illustrated by the schedule of October 1963 with 44,086 plane-miles of daily westbound scheduled flights. The ratio of these schedules of plane-miles is comparable to the ratio of number of aircraft available, as follows:

Daily westbound scheduled plane-miles, October 1963 and March 1962:

$$\frac{44,086}{34,547} = 1.28$$

Average number of CV 880 aircraft available for commercial service, October 1963 and March 1962:

$$\frac{26.0}{20.0} = 1.30$$

TWA's October 1963 daily westbound scheduled flights with CV 880 aircraft served 36 pairs of cities, as shown by the details of an Employees' Timetable in Exhibit A. These 36 pairs of cities in October 1963 also had TWA

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

These 36 pairs of cities had TWA service in the period between December 1960 and October 1963 as listed below. (The plane-miles have been calculated from information in the Employees' Timetables of Exhibit A.)

	Daily Westbound Plane-Miles Scheduled Between 36 Pairs of Cities Served with CV 880 Aircraft in October 1963, by Type of Aircraft							
	B-131	B-331	B-720	CV 880	B-131B	All Jets	All Piston	Total
December 1960	18,644	740	-	-	-	19,384	35,115	54,499
March 1962	15,838	4,965	2,337	28,202	-	51,342	12,493	63,835
October 1963	17,481	1,157	-	44,086	8,495	71,219	8,424	79,643

This pattern of change in service whereby jet service increases, piston service decreases and total service increases is generally similar to that of the 30 pairs of cities analyzed for estimates of previous Chapter IV. In March 1962, using the fleet of twenty CV 880 aircraft and again in October 1963 using the fleet of twenty-six CV 880 aircraft, TWA substantially increased total service to these 36 pairs of cities as compared with the service of December 1960.

The overall change in service to these 36 pairs of cities between December 1960, which was the month before any CV 880 service started and October 1963 when the full fleet of twenty-six aircraft was in service, was as follows:

	Daily Westbound Scheduled Service Plane-Miles		
	Jet Aircraft	Piston Aircraft	Total
December 1960	19,384	35,115	54,499
October 1963	71,219	8,424	79,643
Change	+51,835	-26,691	+25,144

The reduction of piston aircraft service was 51 percent of the jet aircraft service added.

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

Using this pattern of changing service for the fleet of thirty CV 880 aircraft, we calculate the reduction of piston aircraft service as follows:

Year	Additional Jet Plane-Miles With 30 CV 880s (a)	Piston Plane-Miles Reduction, at 51%(b)	Seats Per Average Piston Aircraft(c)	Average Piston Aircraft Load Factor(c)	Passenger-Miles for Reduced Piston Service(b)
	(Millions)	(Millions)			(Millions)
1960	5.8	3.0	68.0	60.2%	123
1961	11.2	5.7	68.3	60.4	235
1962	11.6	5.9	67.9	61.7	247
1963	9.4	4.8	68.2	59.6	195

(a) From page 67.

(b) By calculation.

(c) Calculated from data in TWA's Schedule 3-70M.

REVENUE INCREASE

The foregoing changes in passenger-miles, at TWA's average yields, would have produced a passenger revenue increase as follows:

Year	Passenger-Miles			Average Yield (d)	Net Increase of Passenger Revenue(c)
	Additional CV 880(a)	Deleted Piston (b)	Net Increase (c)		
	(Millions)				(Millions)
1960	351	123	228	5.6454	\$12.9
1961	648	235	413	5.882	24.3
1962	599	247	352	6.104	21.5
1963	506	195	311	5.845	18.2

(a) From page 67.

(b) From table above.

(c) By calculation.

(d) From page 30.

Using the 5 percent additional revenue for various kinds of cargo including mail, express, freight and excess (weight) baggage as mentioned on pages 63 and 31, we calculated additional revenue for these types of cargo and total additional revenue with a fleet of thirty CV 880 aircraft, as fol-

Year	Additional Passenger Revenue(a)	Additional Revenue from Various Types of Cargo, at 5%(b)	Total Additional Revenue(c)
	(Millions)		
1960	\$12.9	\$0.6	\$13.5
1961	24.3	1.2	25.5
1962	21.5	1.1	22.6
1963	18.2	0.9	19.1

(a) From previous page.

(b) By calculation.

(c) By addition.

OPERATING EXPENSES

We estimated changes in Operating Expenses that would have occurred if TWA had received a fleet of thirty CV 880 aircraft rather than twenty aircraft generally in accordance with the method and considerations used for expense estimates of previous Chapters of this report. The details of our estimates are set forth in Exhibit J. The table below summarizes these estimates.

Estimated Changes in Operating Expenses That Would Have Occurred if TWA had Received Thirty CV 880 Aircraft				
Operating Expense	1960	1961	1962	1963
	(Millions)			
Flying Operations	\$ +2.2	\$ +4.2	\$ +4.2	\$ +3.1
Maintenance	+1.8	+3.6	+3.9	-
Aircraft Servicing	+0.6	+1.2	+1.3	+1.1
Passenger Service	+1.0	+1.9	+1.6	+1.4
Traffic Servicing	+0.8	+1.5	+1.5	+1.3
Servicing Administration	+0.1	+0.1	+0.1	+0.1
Promotion and Sales	+1.3	+2.6	+2.4	+2.2
General and Administrative	+0.3	+0.8	+0.6	+0.5
Depreciation and Amortization(A)	+2.7	+5.7	+5.4	+4.4
	\$+10.8	\$+21.6	\$+21.0	\$+14.1

(A) Furnished by Price Waterhouse & Co.

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(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

GAIN OR LOSS FROM OPERATIONS

We calculate the change in Gain or Loss from Operations that would have been the result of TWA receiving thirty rather than twenty CV 880 aircraft as follows:

Year	Additional Revenue(a)	Additional Expense(b)	Improvement In Gain or Loss from Operations(c)
(M i l l i o n s)			
1960	\$13.5	\$10.8	\$2.7
1961	25.5	21.6	3.9
1962	22.6	21.0	1.6
1963	19.1	14.1	5.0

- (a) From table at top of page 71.
 (b) From table at bottom of page 71.
 (c) By subtraction.

(C. & C. Report-Financial Results from Reconstructed Jet Fleet)

CHAPTER VIFINANCIAL GAIN OR LOSS FROM OPERATIONS SUMMARY

The foregoing estimates of change in TWA's Financial Gain or Loss from Operations (also called Operating Profit) are summarized in the following table for the changes in jet aircraft ownership, numbers and receipt dates.

Change in Jet Aircraft	Change in Gain or Loss from Operations				
	1959	1960	1961	1962	1963
	(M i l l i o n s)				
I- Ownership rather than lease of 15 B-131 and 12 B-331 jets	\$ +3.4	\$ +7.9	-	-	-
II- Six additional B-331 jets	+0.3	+16.0	\$ +3.7	\$ +2.0	\$ -0.2
III- Earlier receipt of 15 B-131 and 18 B-331 jets	+6.9	+3.2	-	-	-
IV- Receipt of 20 CV 880 jets on dates in purchase contract	-	+4.0	+2.4	-	-
V- Fleet of 30 rather than 20 CV 880 jets	-	+2.7	+3.9	+1.6	+5.0
Annual Totals	\$+10.6	\$+33.8	\$+10.0	\$+3.6	\$+4.8

In addition to the estimated changes listed above, Price Waterhouse & Co. calculated for the assumptions you gave us for Chapters I through V changes in Depreciation and Amortization Expense for other years affecting the Gain or Loss from Operations as follows:

Calculated by Price Waterhouse & Co.					
I- Ownership rather than lease of 15 B-131 and 12 B-331 jets	-	-	\$ +1.0	\$ +0.1	\$ +0.3
II- Six additional B-331 jets	-	-	-	-	-
III- Earlier receipt of 15 B-131 and 18 B-331 jets	-	-	-0.1	-	-0.3
IV- Receipt of 20 CV 880 jets on dates in purchase contract	-	-	-	+0.8	-0.6
V- Fleet of 30 rather than 20 CV 880 jets	-	-	-	-	-
Annual Totals	-	-	\$ +0.9	\$ +0.9	\$ -0.6
Grand Total	\$+10.6	\$+33.8	\$+10.9	\$+4.5	\$+4.2

Total for All Years: \$+64.0

Respectfully submitted,

Corndale & Colpitts
Consulting Engineers

TWA Ex. 4(c)(4)
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

**REPORT ON
FINANCIAL RESULTS FROM OPERATIONS
FOR
TRANS WORLD AIRLINES, INC.
1959 - 1963**

MAY 2, 1966

**Volume IV
Exhibits B Through J**

**COVERDALE & COLPITTS
CONSULTING ENGINEERS
120 WALL STREET
NEW YORK 5, N. Y.**

TWA Ex. 4(c)(4)
(Exhibits B-J to C. & C. Report-
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Average Number of Jet Aircraft Available for Commercial Service Each Month, 1959-1963, By Type of Aircraft, for the Domestic and International Divisions and the System, Actual, from TWA Operating Statistics

Exhibit C (5 Sheets)

Revised Average Number of Jet Aircraft Available for Commercial Service, for Additional Jet Aircraft and Earlier Receipt Dates

Exhibit D (2 Sheets)

Additional Annual Average Number of B-331 Jet Aircraft Available for Commercial Service Each Month, 1959-1963 for the Domestic and International Divisions and System Calculated for Six Additional B-331 Jet Aircraft, Using PAA's Receipt Dates

Exhibit E (4 Sheets)

General Description of Expenses Allocated to CAB Functional Classifications Based on Section 11, CAB Uniform System of Accounts and Reports, June 1, 1961

Exhibit F (64 Sheets)

Calculation Details for Operating Expense Changes, Chapter II, for Six Additional B-331 Aircraft

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Sheets 13 through 20 - Domestic Division, 1960
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Sheets 43 through 50 - Domestic Division, 1962
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Calculation Details for Operating Expense Changes, Chapter III, for Earlier Receipt of B-131 and B-331 Aircraft

Sheets 1 and 2 - Introduction
Sheets 3 through 11 - Domestic Division, 1959
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Sheets 20 through 27 - Domestic Division, 1960
Sheets 28 through 35 - International Division, 1960

Exhibit H (19 Sheets)

Calculation Details for Operating Expense Changes, Chapter IV, for Receipt of CV 880 Aircraft on Contract Delivery Dates

Sheet 1 - Introduction
Sheets 2 through 10 - Domestic Division, 1960
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Calculation Details for Operating Expense Changes, Chapter V, for a Fleet of Thirty CV 880 Aircraft

Sheets 1 and 2 - Introduction
Sheets 3 through 10 - Domestic Division, 1960
Sheets 11 through 19 - Domestic Division, 1961

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(Exhibits B-J to C. & C. Report-
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REVISED AVERAGE NUMBER OF JET AIRCRAFT AVAILABLE FOR COMMERCIAL SERVICE,
FOR ADDITIONAL JET AIRCRAFT AND EARLIER RECEIPT DATES

We calculated the revised monthly and annual average number of jet aircraft TWA would have had available for commercial service if TWA had the additional jet aircraft and the earlier receipt dates for jet aircraft mentioned on Introduction page 3. We made these calculations for each type of jet aircraft in accordance with the procedure which is set forth in TWA's Statistics Procedure Manual, pages:

04.40.13	04.02.31	04.02.37
04.40.14	04.02.32	04.02.38
04.40.11	04.02.33	04.02.39
04.40.25	04.02.34	04.02.40
04.02.30	04.02.35	04.02.41
	04.02.36	04.02.42

For our calculations we used:

- (a) The revised numbers of jet aircraft and earlier receipt dates tabulated on following pages, (and mentioned on Introduction page 3) as given to us by Cahill, Gordon, Reindel & Ohl.
- (b) Our estimates of the first day each new aircraft would have been placed in commercial service, for the additional aircraft and aircraft received on earlier dates. These estimates are based on TWA's and in some instances, other air lines' actual time interval between receipt and commercial service of aircraft.
- (c) Our selection of a 15th of the month date for CV 880 aircraft described to us as being received in a particular month but not on a specific date within the month.
- (d) Actual or a proportionate number of aircraft-days not used because of strikes, aircraft on lease to Northeast Airlines or aircraft out of service for other causes.
- (e) Assignment of B-331 and B-331B fleets to Domestic and International Division service in proportion to the actual assignment of these types of aircraft to each Division's service.

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 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

REVISED AIRCRAFT RECEIPT DATES,

INCLUDING ADDITIONAL AND/OR EARLIER JETS

Type	Delivery Sequence	Receipt Date
B-131	1	November 30, 1958
	2	December 31, 1958
	3	January 31, 1959
	4	February 27, 1959
	5	March 30, 1959
	6	April 3, 1959
	7	April 18, 1959
	8	May 10, 1959
	9	May 13, 1959
	10	May 24, 1959
	11	May 28, 1959
	12	June 13, 1959
	13	June 29, 1959
	14	July 10, 1959
	15	July 27, 1959
B-331	1	July 19, 1959
	2	August 22, 1959
	3	August 28, 1959
	4	September 22, 1959
	5	October 6, 1959
	6	October 27, 1959
	7	November 5, 1959
	8	November 10, 1959
	9	December 15, 1959
	10	December 30, 1959
	11	January 18, 1960
	12	February 29, 1960
	13	March 23, 1960
	14	April 26, 1960
	15	April 29, 1960
	16	May 9, 1960
	17	June 8, 1960
	18	July 1, 1960

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Type	Delivery Sequence	Receipt Date
CV 880	1	November, 1959
	2	December, 1959
	3	January, 1960
	4	February, 1960
	5	February, 1960
	6	March, 1960
	7	March, 1960
	8	April, 1960
	9	April, 1960
	10	April, 1960
	11	May, 1960
	12	May, 1960
	13	May, 1960
	14	June, 1960
	15	June, 1960
	16	June, 1960
	17	June, 1960
	18	July, 1960
	19	July, 1960
	20	July, 1960
	21	July, 1960
	22	July, 1960
	23	August, 1960
	24	August, 1960
	25	August, 1960
	26	August, 1960
	27	August, 1960
	28	September, 1960
	29	September, 1960
	30	September, 1960

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 (Exhibits B-J to C. & C. Report-
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ADDITIONAL ANNUAL AVERAGE NUMBER OF B-331 JET AIRCRAFT
 AVAILABLE FOR COMMERCIAL SERVICE EACH MONTH, 1959-1963
 FOR THE DOMESTIC AND INTERNATIONAL DIVISIONS AND SYSTEM
 CALCULATED FOR SIX ADDITIONAL B-331 JET AIRCRAFT,
 USING PAA'S RECEIPT DATES

(Source: Pages 10, 12, 13 and Exhibit C)

Period	International Division	Domestic Division	System
<u>1959</u>			
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November	0.6	-	0.6
December	2.0	-	2.0
Annual Average	0.2	-	0.2
<u>1960</u>			
January	2.1	0.9	3.0
February	2.1	0.9	3.0
March	2.3	1.0	3.3
April	2.9	1.2	4.1
May	3.6	1.4	5.0
June	4.1	1.7	5.8
July	4.3	1.7	6.0
August	4.3	1.7	6.0
September	4.3	1.7	6.0
October	4.3	1.7	6.0
November	4.3	1.7	6.0
December	4.3	1.7	6.0
Annual Average	3.6	1.4	5.0
<u>1961</u>			
January	3.8	2.2	6.0
February(Strike)	3.1	1.9	5.0
March	3.8	2.2	6.0
April	3.8	2.2	6.0
May	3.8	2.2	6.0
June	3.8	2.2	6.0
July	3.8	2.2	6.0
August	3.8	2.2	6.0
September	3.8	2.2	6.0
October	3.8	2.2	6.0
November	3.8	2.2	6.0
December	3.8	2.2	6.0
Annual Average	3.7	2.2	5.9

ADDITIONAL ANNUAL AVERAGE NUMBER OF B-331 JET AIRCRAFT
AVAILABLE FOR COMMERCIAL SERVICE EACH MONTH, 1959-1963
FOR THE DOMESTIC AND INTERNATIONAL DIVISIONS AND SYSTEM
CALCULATED FOR SIX ADDITIONAL B-331 JET AIRCRAFT,
USING PAA'S RECEIPT DATES

(Source: Pages 10, 12, 13 and Exhibit C)

Period	International Division	Domestic Division	System
<u>1962</u>			
January	4.9	1.1	6.0
February	4.9	1.1	6.0
March	4.9	1.1	6.0
April	4.9	1.1	6.0
May	4.9	1.1	6.0
June	4.9	1.1	6.0
July	4.9	1.1	6.0
August	4.9	1.1	6.0
September	4.9	1.1	6.0
October	4.9	1.1	6.0
November	4.9	1.1	6.0
December	4.9	1.1	6.0
Annual Average	4.9	1.1	6.0
<u>1963</u>			
January	5.2	0.8	6.0
February	5.2	0.8	6.0
March	5.2	0.8	6.0
April	5.2	0.8	6.0
May	5.2	0.8	6.0
June	5.2	0.8	6.0
July	5.2	0.8	6.0
August	5.2	0.8	6.0
September	5.2	0.8	6.0
October	5.2	0.8	6.0
November	5.2	0.8	6.0
December	5.2	0.8	6.0
Annual Average	5.2	0.8	6.0

TWA Ex. 4(c)(4), Exhibit E, page 1 of 4
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GENERAL DESCRIPTION OF EXPENSES ALLOCATED TO CAB FUNCTIONAL CLASSIFICATIONS
BASED ON SECTION 11, CAB UNIFORM SYSTEM OF ACCOUNTS AND REPORTS, JUNE 1, 1961

Flying Operations, CAB Account 5100

Expenses incurred directly for the in-flight operation of aircraft and expenses attaching to the holding of aircraft and aircraft operational personnel in readiness for assignment to an in-flight status.

This includes flight crew salaries, group health and retirement benefits, flight crew training including instructors, payroll taxes, fuel and oil, aircraft hull insurance and aircraft rentals.

Maintenance, CAB Account 5400

Direct Maintenance, CAB Account 5200

The costs of labor, materials and outside services consumed directly in periodic maintenance operations and the maintenance and repair of property and equipment of all types and classes, regardless of the location at which incurred.

This includes costs incurred directly in overhaul, maintenance and repair of air-frames and aircraft engines and related flight equipment.

Maintenance Burden, CAB Account 5300

The overhead or general expenses used directly for the activities involved in periodic maintenance operations and the maintenance and repair of property and equipment of all types and classes, including the cost of direct labor, materials and outside services used in the maintenance and repair of Maintenance and Engineering Equipment and Maintenance Buildings and Improvements. It also includes expenses related to the administration of maintenance stocks and stores, the keeping of pertinent maintenance operations records, and the scheduling, controlling, planning and supervision of maintenance operations.

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Also costs of shop supplies and expendable small tools used in maintaining and servicing equipment when not directly assignable to a specific repair job, group health and retirement benefits, payroll taxes, vacation pay and maintenance training related to direct labor personnel.

Passenger Service, CAB Account 5500

Expenses chargeable directly to activities contributing to the comfort, safety and convenience of passengers while in flight and when flights are interrupted.

It includes salaries and related payroll expenses of hostesses and pursers and of ground supervisory and administrative personnel, hostess and purser training, in-flight food and supplies and passenger liability insurance.

Aircraft and Traffic Services, CAB Account 6400

Aircraft Servicing, CAB Account 6100

These expenses are the salaries and related payroll expenses of ground personnel and other expenses incurred on the ground incident to the protection and control of the in-flight movement of aircraft, scheduling or preparing aircraft operational crews for flight assignment, landing and parking aircraft, routine checking, servicing and fueling aircraft and other expenses incurred on the ground incident to readying for take-off and arrival of aircraft.

Traffic Servicing, CAB Account 6200

The compensation of ground personnel and other expenses incurred on the ground incident to handling traffic of all types and classes on the ground subsequent to the issuance of tickets.

Also expenses attributable to the operation of airport traffic offices and expenses incurred both in enplaning and deplaning traffic as well as expenses incurred in preparation for enplanement and all expenses subsequent to deplanement.

TWA Ex. 4(c)(4), Exhibit E, page 3 of 4
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Servicing Administration, CAB Account 6300

Expenses of a general nature incurred in performing supervisory or administrative activities relating solely and in common to subfunctions 6100 Aircraft Servicing and 6200 Traffic Servicing.

Promotion and Sales, CAB Account 6700

Reservations and Sales, CAB Account 6500

Expenses incident to direct sales solicitation, documenting sales, controlling and arranging or confirming aircraft space sold, and in developing tariffs and schedules for publication and expenses attributable to the operation of city ticket offices. Travel agents' commissions also are included in this classification.

Advertising and Publicity, CAB Account 6600

Expenses incurred in creating public preference for the air carrier and its services; stimulating development of the air transport market; and promoting the air carrier or developing air transportation generally.

It includes the cost of newspaper, radio and other advertising media and publicity and the salaries and related payroll expenses of administrative personnel responsible for advertising and publicity functions.

General and Administrative, CAB Account 6800

Expenses of a general corporate nature and expenses incurred in performing activities which contribute to more than one of the above functions such as financial accounting and purchasing activities, corporate legal matters and general operational administration not directly applicable to a specific area of functional responsibility.

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(Exhibits B-J to C. & C. Report-
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Depreciation and Amortization, CAB Account 7000

Charges to record losses suffered through current exhaustion of the serviceability of property and equipment due to wear and tear from use and the action of time and the elements, which are not replaced by current repairs, as well as losses in serviceability occasioned by obsolescence, supersession, discoveries, change in popular demand or action by public authority. It also includes charges for the amortization of capitalized developmental and preoperating costs including training flight crews and other personnel in connection with the acquisition of new types of aircraft.

TWA Ex. 4(c)(4), Exhibit F, page 1 of 64
(Exhibits B-J to C. & C. Report-
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CALCULATION DETAILS FOR OPERATING EXPENSE CHANGES, CHAPTER II

FOR SIX ADDITIONAL B-331 AIRCRAFT

For our calculations of operating expense changes that would have occurred if TWA had received the six additional B-331 jet aircraft on the PAA receipt dates as mentioned on page 10, we used operating statistics and financial results mentioned in the text of Chapter II and the following which were not mentioned in the text.

	1959	1960	1961	1962	1963
	(M i l l i o n s)				
<u>International Division</u>					
Plane-miles(a)					
B-331 aircraft	0.2	10.7	13.0	17.3	16.8
B-331B aircraft	-	-	-	0.1	7.6
L-1649A aircraft(b)	17.0	6.8	4.8	-	-
Division Total(b)	23.6	19.2	17.8	20.2	27.3
Transportation Revenue(c)	\$73.6	\$ 98.4	\$ 81.7	\$100.8	\$131.3
<u>Domestic Division</u>					
Plane-miles(d)					
B-331 aircraft		3.8	6.5	3.0	2.8
B-331B aircraft		-	-	-	0.4
L-1649A aircraft		7.8	-	-	-
L-1049G aircraft		-	10.3	10.0	9.4
Division Total(b)		91.0	85.6	89.9	99.6
Passenger Revenue(e)		\$253.3	\$252.2	\$273.0	\$311.8
Transportation Revenue(e)		\$275.5	\$276.1	\$298.5	\$341.5

- (a) Calculated annual summaries of figures shown in Monthly Operating Statistics, Schedule 3-71M (Report 3-453M since October 1963).
- (b) Including all-cargo plane-miles.
- (c) From TWA December Financial Reports, Schedule 2-2M (Report 2-2M since October 1963).
- (d) Calculated annual summaries of figures shown in Monthly Operating Statistics, Schedule 3-70M (Report 3-452M since October 1963).
- (e) From TWA December Financial Reports, Schedule 2-1M (Report 2-1M since October 1963).

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To obtain annual figures of the estimated net change in plane-miles, we subtracted the estimated decrease in piston plane-miles listed on page 29 from the estimated additional B-331 plane-miles listed on page 28 as follows:

	1960	1961	1962	1963
	(M i l l i o n s)			
<u>Domestic Division</u>				
Additional B-331 plane-miles(a)	2.0	3.3	1.4	0.7
Piston plane-miles decrease(b)	2.9	4.2	0.9	0.2
Net Change	-0.9	-0.9	+0.5	+0.5

- (a) From page 28.
(b) From page 29.

To obtain simulated Transportation Revenue figures for each Division, we apportioned to each Division the estimated additional revenue for cargo including mail, express, freight and excess baggage listed on page 33, as follows:

Year	Estimated Additional Mail, Express, Freight, Excess Baggage Revenue(a)	Estimated Additional Passenger Revenue		Apportionment of Additional Mail, Express, Freight, Excess Baggage Revenue		Simulated Additional Transportation Revenue	
		International Division (b)	Domestic Division (c)	International Division	Domestic Division	International Division	Domestic Division
		(M i l l i o n s)					
1960	\$1.0	\$18.9	\$1.9	\$0.9	\$0.1	\$19.8	\$2.0
1961	1.1	20.4	1.4	1.0	0.1	21.4	1.5
1962	1.6	29.5	2.0	1.5	0.1	31.0	2.1
1963	0.4	5.3	1.9	0.3	0.1	5.6	2.0

- (a) From page 33.
(b) From page 27.
(c) From page 30.

The pages that follow set forth the details of our calculations of operating expense changes with the six additional B-331 jet aircraft for the International and Domestic Divisions for the years 1959-1963.

TWA Ex. 4(c)(4), Exhibit F, page 3 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1959

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	<u>(Millions)</u>	
<u>FLYING OPERATIONS EXPENSE</u>		
For B-331 Jet Aircraft	\$ 0.2	\$+0.1
<p>This expense was incurred for operating B-331 aircraft 0.2 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 0.1 million B-331 plane-miles mentioned on page 15 would have increased this expense proportionately. The calculation is:</p> $\$0.2 \times \frac{0.1}{0.2} = \$0.1 \text{ million increase}$		
For L-1649A Piston Aircraft		
A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses	\$17.4	\$-0.1
<p>This expense was incurred for operating L-1649A aircraft 17.0 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 0.1 million L-1649A plane-miles mentioned on page 17 would have decreased this Group A expense proportionately. The calculation is:</p> $\$17.4 \times \frac{0.1}{17.0} = \$0.1 \text{ million decrease}$		
B. Purchased public liability and property damage insurance	\$ 0.7	NC
Total, L-1649A Aircraft	\$18.1	\$-0.1
For Other Aircraft and Generally Nonrevenue	\$10.1	NC
Total Flying Operations Expense	\$28.4	NC

NC - No significant change estimated for these expenses.

TWA Ex. 4(c)(4), Exhibit F, page 4 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1959

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

MAINTENANCE EXPENSE

Direct Maintenance Expense

For B-331 Jet Aircraft Flight Equipment	\$ 0.2	\$+0.1
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This expense was incurred for operating B-331 aircraft 0.2 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 0.1 million B-331 plane-miles mentioned on page 15 would have increased this expense proportionately. The calculation is:

$$\$0.2 \times \frac{0.1}{0.2} = \$0.1 \text{ million increase}$$

For L-1649A Piston Aircraft Flight Equipment	\$ 5.9	NC
For Other Aircraft and Generally Nonrevenue	\$ 2.5	NC
For General Ground Property and Equipment	\$ 0.2	NC
	\$ 8.8	\$+0.1
<u>Applied Maintenance Burden Expense</u>		
For B-331 Jet Aircraft Flight Equipment	\$ 0.1	\$+0.1(a)

This \$0.1 million B-331 Applied Maintenance Burden expense was incurred in connection with the \$0.2 million B-331 Direct Maintenance expense shown above. We estimate the \$0.1 million increase for B-331 Direct Maintenance would have been accompanied by a proportionate increase in Applied Maintenance Burden. The calculation is:

$$\$0.1 \times \frac{\$0.1}{\$0.2} = \$0.05 \text{ million increase(a)}$$

For L-1649A Piston Aircraft Flight Equipment	\$ 3.4	NC
For Other Aircraft and Generally Nonrevenue	\$ 1.3	NC
For General Ground Property and Equipment	\$ 0.1	NC
	\$ 4.9	\$+0.1
<u>Total Applied Maintenance Burden Expense</u>		
	\$13.7	\$+0.2
<u>Total Maintenance Expense</u>		

(a) The actual calculation is \$0.05 million which we have rounded to \$0.1 million.

TWA Ex. 4(c)(4), Exhibit F, page 5 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1959

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>AIRCRAFT SERVICING EXPENSE</u>	\$ 7.2	
<u>PASSENGER SERVICE EXPENSE</u>	\$ 5.4	
<u>TRAFFIC SERVICING EXPENSE</u>	\$ 3.1	
<u>SERVICING ADMINISTRATION EXPENSE</u>	\$ 0.8	
<u>GENERAL AND ADMINISTRATIVE EXPENSE</u>	\$ 3.1	
Total for these Expenses	\$19.6	NC
<p>This expense was incurred in connection with operating 23.6 million plane-miles and transportation revenues of \$73.6 million (Exhibit F, Sheet 1). Assuming the additional B-331 aircraft, we estimated no change in total plane-miles (page 18) and a very small increase of \$0.6 million in revenues (page 33), and we estimate no significant change in the above-listed expenses.</p>		
<u>PROMOTION AND SALES EXPENSE</u>	\$11.3	\$+0.1
<p>This \$11.3 million expense was incurred in connection with \$59.5 million passenger revenues (page 27) . For the \$0.6 million increase in passenger revenues mentioned on page 27 , we estimate a proportionate increase in Promotion and Sales expense. The calculation is:</p> $\$11.3 \times \frac{\$0.6}{\$59.5} = \$0.1 \text{ million increase}$		
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$ 8.2	NC
For ground property and equipment	\$ 0.8	NC
For amortization of developmental and pre-operating expense	\$ 0.7	NC
Total Depreciation and Amortization Expense	\$ 9.7	NC
<p><u>Note:</u> These figures were given to us by Price Waterhouse & Co.</p>		
<u>TOTAL OPERATING EXPENSE</u>	\$82.7	\$+0.3

TWA Ex. 4(c)(4), Exhibit F, page 6 of 64
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1960

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 8.9 \$+5.2

This expense was incurred for operating B-331 aircraft 10.7 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 6.3 million B-331 plane-miles mentioned on page 15 would have increased this Group A expense proportionately. The calculation is:

$$\$8.9 \times \frac{6.3}{10.7} = \$5.2 \text{ million increase}$$

- B. Purchased public liability and property damage insurance

\$ 0.9 \$+0.5

This expense is primarily for aircraft hull insurance for 6.1 B-331 aircraft available for commercial service (page 11). We estimate the 3.6 increase in the number of available aircraft mentioned on page 13 would have increased this insurance expense proportionately. The calculation is:

$$\$0.9 \times \frac{3.6}{6.1} = \$0.5 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 9.8 \$+5.7

For L-1649A Piston Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 8.0 \$-6.0

This expense was incurred for operating L-1649A aircraft 6.8 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 5.1 million L-1649A plane-miles mentioned on page 17 would have decreased this Group A expense proportionately. The calculation is:

$$\$8.0 \times \frac{5.1}{6.8} = \$6.0 \text{ million decrease}$$

TWA Ex. 4(c)(4), Exhibit F, page 7 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	<u>(M i l l i o n s)</u>	
B. Purchased public liability and property damage insurance	\$ 0.2	NC
Total L-1649A Flying Operations Expense	\$ 8.2	\$-6.0
For Other Aircraft	\$ 3.1	NC
For Generally Nonrevenue	\$ 0.5	NC
Total Flying Operations Expense	<u>\$21.6</u>	<u>\$-0.3</u>

MAINTENANCE EXPENSE

Direct Maintenance Expense

For B-331 Jet Aircraft Flight Equipment	\$ 3.9	\$+2.3
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This expense was incurred for operating B-331 aircraft 10.7 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 6.3 million B-331 plane-miles mentioned on page 15 would have increased this expense proportionately. The calculation is:

$$\$3.9 \times \frac{6.3}{10.7} = \$2.3 \text{ million increase}$$

For L-1649A Piston Aircraft Flight Equipment	\$ 3.3	\$-2.5
--	--------	--------

This expense was incurred for operating L-1649A aircraft 6.8 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 5.1 million L-1649A plane-miles mentioned on page 17 would have decreased this expense proportionately. The calculation is:

$$\$3.3 \times \frac{5.1}{6.8} = \$2.5 \text{ million decrease}$$

For Other Aircraft	\$ 0.5	NC
For Generally Nonrevenue	\$ 0.1	NC
For General Ground Property and Equipment	\$ 0.2	NC
Total Direct Maintenance Expense	<u>\$ 8.0</u>	<u>\$-0.2</u>

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1960

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(Millions)	

Applied Maintenance Burden Expense

For B-331 Jet Aircraft Flight Equipment

\$ 1.5

\$+0.9

This \$1.5 million B-331 Applied Maintenance Burden expense was incurred in connection with \$3.9 million B-331 Direct Maintenance expense shown on the previous page. We estimate the \$2.3 million increase for B-331 Direct Maintenance expense (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:

$$\$1.5 \times \frac{\$2.3}{\$3.9} = \$0.9 \text{ million increase}$$

For L-1649A Piston Aircraft Flight Equipment

\$ 2.2

\$-1.7

This \$2.2 million L-1649A Applied Maintenance Burden expense was incurred in connection with \$3.3 million L-1649A Direct Maintenance expense shown on the previous page. We estimate the \$2.5 million decrease in L-1649A Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease of Applied Maintenance Burden expense. The calculation is:

$$\$2.2 \times \frac{\$2.5}{\$3.3} = \$1.7 \text{ million decrease}$$

For Other Aircraft

\$ 0.6

NC

For Generally Nonrevenue

#

NC

For General Ground Property and Equipment

\$ 0.1

NC

Total Applied Maintenance Burden Expense

\$ 4.4

\$-0.8

Total Maintenance Expense

\$12.4

\$-1.0

This symbol is used to designate an amount too small to be significant in these estimates which are rounded to the nearest \$0.1 million.

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1960

AIRCRAFT SERVICING EXPENSE

- A. Aircraft control personnel, trainees and instructors, rentals, landing fees, shop and servicing supplies, insurance-employee welfare and taxes-payroll

\$ 3.5

Actual Expense
With Revisions
of Chapter I
(Millions)
Estimated
Change In
Expense, For
Chapter II

\$+0.2

This expense was incurred in connection with operating 19.2 million plane-miles (Exhibit F, Sheet 1). We estimate the 1.2 million plane-miles net increase mentioned on page 18 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$3.5 \times \frac{1.2}{19.2} = \$0.2 \text{ million increase}$$

- B. General aircraft and traffic handling personnel, communications personnel, record keeping and statistical personnel, personnel expenses, communications purchased, other services-outside, other supplies and various miscellaneous expenses

\$ 3.5

NC

Total Aircraft Servicing Expense

\$ 7.0

\$+0.2

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses and taxes-payroll

\$ 2.7

\$+0.2

This expense was incurred in connection with operating 17.7 million plane-miles (page 14). We estimate the 1.2 million plane-miles net increase mentioned on page 18 would have been accompanied by a proportionate increase of this Group A expense. The calculation is:

$$\$2.7 \times \frac{1.2}{17.7} = \$0.2 \text{ million increase}$$

- B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside

\$ 2.8

\$+0.6

This expense was incurred in connection with passenger traffic producing \$82.0 million revenue (page 27). We estimate the \$18.9 million increase in revenue from passengers mentioned on page 27 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$2.8 \times \frac{\$18.9}{\$82.0} = \$0.6 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit F, page 10 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chapter I <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter II <u>(M i l l i o n s)</u>
Interrupted trips expense and various miscellaneous expenses	\$ 0.2	NC
Total Passenger Service Expense	<u>\$ 5.7</u>	<u>\$+0.8</u>

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies and taxes-payroll

\$ 2.4 \$+0.5

This expense was incurred in connection with \$98.4 million transportation revenues (Exhibit F, Sheet 1). We estimate the \$19.8 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase of this Group A expense. The calculation is:

$$\$2.4 \times \frac{\$19.8}{\$98.4} = \$0.5 \text{ million increase}$$

- B. Stationery, printing and office supplies, clearance, customs and duties, other expenses and various miscellaneous expenses

\$ 0.8 NC

Total Traffic Servicing Expense

\$ 3.2 \$+0.5

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense

\$ 0.9 \$+0.1

This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$7.0 and \$3.2 million, respectively (previous page and above). We estimate the increases in Aircraft and Traffic Servicing expense of \$0.2 and \$0.5 million respectively (previous page and above) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:

$$\$0.9 \times \frac{(\$0.2 + \$0.5)}{(\$7.0 + \$3.2)} = \$0.1 \text{ million increase}$$

Total Servicing Administration Expense

\$ 0.9 \$+0.1

CALCULATION DETAILS FOR CHAPTER II
INTERNATIONAL DIVISION, 1960

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, other expenses, insurance-employee welfare and taxes-payroll

\$11.1

\$+2.2

This expense was incurred in connection with \$98.4 million transportation revenues (Exhibit F, Sheet 1). We estimate the \$19.8 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$11.1 \times \frac{\$19.8}{\$98.4} = \$2.2 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies and various miscellaneous expenses

\$ 0.8

NC

Total Reservations and Sales Expense

\$11.9

\$+2.2

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables

\$ 4.0

\$+0.8

This expense was incurred in connection with \$98.4 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$19.8 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.0 \times \frac{\$19.8}{\$98.4} = \$0.8 \text{ million increase}$$

- B. Other promotional and publicity expenses, professional and technical fees and expenses and various miscellaneous expenses

\$ 0.6

NC

Total Advertising and Publicity Expense

\$ 4.6

\$+0.8

Total Promotion and Sales Expense

\$16.5

\$+3.0

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>GENERAL AND ADMINISTRATIVE EXPENSE</u>		
A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, rentals, stationery, printing and office supplies, insurance-employee welfare and taxes-payroll	\$ 2.6	\$+0.5
This expense was incurred in connection with \$98.4 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$19.8 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:		
	$\$2.6 \times \frac{\$19.8}{\$98.4} = \$0.5 \text{ million increase}$	
B. General management personnel, communications purchased, professional and technical fees and expenses, taxes-other than payroll, purchased public liability and property damage insurance, legal fees and expenses and various miscellaneous expenses	\$ 0.9	NC
Total General and Administrative Expense	\$ 3.5	\$+0.5
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
A. For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$ 9.4	\$+2.3
B. For ground equipment including leasehold improvements	\$ 0.6	NC
C. For amortization of developmental and pre-operating expense	\$ 1.3	\$+0.4
Total Depreciation and Amortization Expense	\$11.3	\$+2.7
Note: These figures were given to us by Price Waterhouse & Co.		
TOTAL OPERATING EXPENSE	\$82.1	\$+6.5

TWA Ex. 4(c)(4), Exhibit F, page 13 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$ 3.2

\$+1.7

This expense was incurred for operating B-331 aircraft 3.8 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 2.0 million B-331 plane-miles mentioned on page 28 would have increased this Group A expense proportionately. The calculation is:

$$\$3.2 \times \frac{2.0}{3.8} = \$1.7 \text{ million increase}$$

- B. Purchased public liability and property damage insurance

\$ 0.3

\$+0.2

This expense is primarily for aircraft hull insurance for 2.7 B-331 aircraft available for commercial service (page 28). We estimate the 1.4 increase in the available number of aircraft mentioned on page 28 would have increased this insurance expense proportionately. The calculation is:

$$\$0.3 \times \frac{1.4}{2.7} = \$0.2 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 3.5

\$+1.9

For L-1649A Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses

\$ 6.7

\$-2.5

This expense was incurred for operating L-1649A aircraft 7.8 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 2.9 million L-1649A plane-miles mentioned on page 29 would have decreased this Group A expense proportionately. The calculation is:

$$\$6.7 \times \frac{2.9}{7.8} = \$2.5 \text{ million decrease}$$

AIR-100

TWA Ex. 4(c)(4), Exhibit F, page 14 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1960

	<u>Actual Expense With Revisions of Chapter I</u>	<u>Estimated Change In Expense, For Chapter II</u>
	<u>(M i l l i o n s)</u>	
B. Purchased public liability and property damage insurance	\$ 0.2	NC
Total L-1649A Flying Operations Expense	\$ 6.9	\$-2.5
For Other Aircraft and Generally Nonrevenue	\$63.6	NC
Total Flying Operations Expense	<u>\$74.0</u>	<u>\$-0.6</u>
<u>MAINTENANCE EXPENSE</u>		
Direct Maintenance Expense		
For B-331 Jet Aircraft Flight Equipment	\$ 1.3	\$+0.7
<p>This expense was incurred for operating B-331 aircraft 3.8 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 2.0 million B-331 plane-miles mentioned on page 28 would have increased this expense proportionately. The calculation is:</p> $\$1.3 \times \frac{2.0}{3.8} = \$0.7 \text{ million increase}$		
For L-1649A Piston Aircraft Flight Equipment	\$ 3.7	\$-1.4
<p>This expense was incurred for operating L-1649A aircraft 7.8 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 2.9 million L-1649A plane-miles mentioned on page 29 would have decreased this expense proportionately. The calculation is:</p> $\$3.7 \times \frac{2.9}{7.8} = \$1.4 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$30.1	NC
For General Ground Property and Equipment	\$ 0.8	NC
Total Direct Maintenance Expense	<u>\$35.9</u>	<u>\$-0.7</u>

CALCULATION DETAILS FOR CHAPTER IIDOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>Applied Maintenance Burden Expense</u>		
For B-331 Jet Aircraft Flight Equipment	\$ 0.5	\$+0.3
<p>This \$0.5 million B-331 Applied Maintenance Burden expense was incurred in connection with \$1.3 million B-331 Direct Maintenance expense shown on the previous page. We estimate the \$0.7 million increase for B-331 Direct Maintenance (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$0.5 \times \frac{\$0.7}{\$1.3} = \$0.3 \text{ million increase}$		
For L-1649A Piston Aircraft Flight Equipment	\$ 2.5	\$-0.9
<p>This \$2.5 million L-1649A Applied Maintenance Burden expense was incurred in connection with the \$3.7 million L-1649A Direct Maintenance expense shown on the previous page. We estimated the \$1.4 million decrease for L-1649A Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$2.5 \times \frac{\$1.4}{\$3.7} = \$0.9 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$20.6	NC
For General Ground Property and Equipment	\$ 0.8	NC
Total Applied Maintenance Burden Expense	<u>\$24.4</u>	<u>\$-0.6</u>
Total Maintenance Expense	<u>\$60.3</u>	<u>\$-1.3</u>

TWA Ex. 4(c)(4), Exhibit F, page 16 of 64
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$18.5	\$-0.2
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This expense was incurred in connection with operating 91.0 million plane-miles (Exhibit F, Sheet 1). We estimate the net reduction of 0.9 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate decrease in this Group A expense. The calculation is:

$$\$18.5 \times \frac{0.9}{91.0} = \$0.2 \text{ million decrease}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses

\$ 2.9	NC
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Total Aircraft Servicing Expense

\$21.4	\$-0.2
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PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll

\$ 8.7	\$-0.1
--------	--------

This expense was incurred in connection with operating 87.9 million plane-miles (page 29). We estimate the net reduction of 0.9 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate decrease in this Group A expense. The calculation is:

$$\$8.7 \times \frac{0.9}{87.9} = \$0.1 \text{ million decrease}$$

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside	\$12.9	\$+0.1
This expense was incurred in connection with passenger traffic revenue of \$253.3 million (Exhibit F, Sheet 1). We estimate the \$1.9 million increase in revenue from passenger traffic mentioned on page 30 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:		
	$\$12.9 \times \frac{\$1.9}{\$253.3} = \$0.1 \text{ million increase}$	
C. Trainees and instructors, interrupted trips expense, other expenses and various miscellaneous expenses	\$ 0.6	NC
Total Passenger Service Expense	\$22.2	NC

TRAFFIC SERVICING EXPENSE

A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies, insurance-employee welfare, taxes-payroll and injuries, loss and damage	\$15.4	\$+0.1
This expense was incurred in connection with \$275.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:		
	$\$15.4 \times \frac{\$2.0}{\$275.5} = \$0.1 \text{ million increase}$	
B. Other personnel, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, other expenses and various miscellaneous expenses	\$ 1.5	NC
Total Traffic Servicing Expense	\$16.9	\$+0.1

TWA Ex. 4(c)(4), Exhibit F, page 18 of 64
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IIDOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense

\$ 1.9

NC

This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$21.4 and \$16.9 million respectively (shown previously). We estimate the changes in Aircraft and Traffic Servicing expenses of \$-0.2 and \$+0.1 million respectively (previous page) would have been accompanied by a proportionate change in the Servicing Administration expense. The calculation is:

$$\$1.9 \times \frac{(\$-0.2 + 0.1)}{(\$21.4 + 16.9)} = \$0.005 \text{ million decrease}$$

Total Servicing Administration Expense

\$ 1.9

NC

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, tariffs, schedules and timetables, rentals, other expenses, insurance-employee welfare and taxes-payroll

\$21.8

\$+0.2

This expense was incurred in connection with \$275.5 million transportation revenue (Exhibit F, Sheet 1). We estimate, the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$21.8 \times \frac{\$2.0}{\$275.5} = \$0.2 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies, memberships and various miscellaneous expenses

\$ 2.2

NC

Total Reservations and Sales Expense

\$24.0

\$+0.2

TWA Ex. 4(c)(4), Exhibit F, page 19 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	<u>(M i l l i o n s)</u>	
Advertising and Publicity		
A. Other personnel, advertising and tariffs, schedules and timetables	\$ 4.7	NC
This expense was incurred in connection with \$275.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:		
	$\$4.7 \times \frac{\$2.0}{\$275.5} = \$0.03 \text{ million increase}$	
B. Other promotional and publicity expenses, professional and technical fees and ex- penses, personnel expenses, rentals and various miscellaneous expenses	\$ 0.7	NC
Total Advertising and Publicity Expense	\$ 5.4	NC
Total Promotion and Sales Expense	\$29.4	\$+0.2

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll

\$ 6.2 NC

This expense was incurred in connection with \$275.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$ 6.2 \times \frac{\$ 2.0}{\$ 275.5} = \$0.04 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit F, page 20 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

B. Uncollectible accounts

\$ 0.7

NC

This expense was incurred in connection with \$275.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this expense. The calculation is:

$$\$0.7 \times \frac{\$2.0}{\$275.5} = \$0.005 \text{ million increase}$$

C. General management personnel, communications purchased, professional and technical fees and expenses, memberships, corporate and fiscal expenses, taxes—other than payroll, purchased public liability and property damage insurance, legal fees and expenses; other services—outside, other supplies and various miscellaneous expenses

\$ 4.3

NC

Total General and Administrative Expense

\$11.2

NC

DEPRECIATION AND AMORTIZATION EXPENSE

For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence

\$27.9

\$+0.9

For ground property and equipment

\$ 3.8

NC

For amortization of developmental and pre-operating expense

\$ 2.6

\$+0.2

Total Depreciation and Amortization Expense

\$34.3

\$+1.1

Note: These figures were given to us by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE

\$271.6

\$-0.7

CALCULATION DETAILS FOR CHAPTER IIINTERNATIONAL DIVISION, 1961

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, rentals, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$13.3

\$+6.8

This expense was incurred for operating B-331 aircraft 13.0 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 6.6 million B-331 plane-miles mentioned on page 15 would have increased this Group A expense proportionately. The calculation is:

$$\$13.3 \times \frac{6.6}{13.0} = \$6.8 \text{ million increase}$$

- B. Insurance purchased-general

\$ 0.8

\$+0.4

This expense is primarily for aircraft hull insurance for 7.3 B-331 aircraft available for commercial service (page 11). We estimate the 3.7 increase in the number of available aircraft mentioned on page 13 would have increased this insurance expense proportionately. The calculation is:

$$\$0.8 \times \frac{3.7}{7.3} = \$0.4 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$14.1\$+7.2

For L-1649A Piston Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 6.9

\$-2.3

This expense was incurred for operating L-1649A aircraft 4.8 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 1.6 million L-1649A plane-miles mentioned on page 17 would have decreased this Group A expense proportionately. The calculation is:

$$\$6.9 \times \frac{1.6}{4.8} = \$2.3 \text{ million decrease}$$

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1961

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
B. Insurance purchased-general	\$ 0.1	NC
Total L-1649A Flying Operations Expense	\$ 7.0	\$-2.3
For Other Aircraft and Generally Nonrevenue	\$ 0.4	NC
Total Flying Operations Expense	\$21.5	\$+4.9

MAINTENANCE EXPENSE

Direct Maintenance Expense

For B-331 Jet Aircraft Flight Equipment	\$ 4.4	\$+2.2
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This expense was incurred for operating B-331 aircraft 13.0 million plane-miles (page 15). We estimate the additional 6.6 million B-331 plane-miles mentioned on page 15 would have increased this expense proportionately. The calculation is:

$$\$4.4 \times \frac{6.6}{13.0} = \$2.2 \text{ million increase}$$

For L-1649A Piston Aircraft Flight Equipment	\$ 2.0	\$-0.7
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This expense was incurred for operating L-1649A aircraft 4.8 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 1.6 million L-1649A plane-miles mentioned on page 17 would have decreased this expense proportionately. The calculation is:

$$\$2.0 \times \frac{1.6}{4.8} = \$0.7 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue	\$ 0.1	NC
For General Ground Property and Equipment	\$ 0.3	\$+0.1

This expense was incurred in connection with operations that produced \$81.7 million transportation revenues (Exhibit F, Sheet 1). We estimate the additional B-331 aircraft would have produced an increase of \$21.4 million simulated transportation revenues (Exhibit F, Sheet 2). We select \$0.1 million increase in Direct Maintenance expense for Ground Property and Equipment to reflect a cost increase that may have taken place.

Total Direct Maintenance Expense	\$ 6.8	\$+1.6
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CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1961

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>Applied Maintenance Burden Expense</u>		
For B-331 Jet Aircraft Flight Equipment	\$ 3.2	\$+1.6
<p>This \$3.2 million B-331 Applied Maintenance Burden expense was incurred in connection with \$4.4 million B-331 Direct Maintenance expense shown on the previous page. We estimate the \$2.2 million increase for B-331 Direct Maintenance (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$3.2 \times \frac{\$2.2}{\$4.4} = \$1.6 \text{ million increase}$		
For L-1649A Piston Aircraft Flight Equipment	\$ 1.6	\$-0.6
<p>This \$1.6 million L-1649A Applied Maintenance Burden expense was incurred in connection with \$2.0 million L-1649A Direct Maintenance expense shown on the previous page. We estimate the \$0.7 million decrease in L-1649A Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$1.6 \times \frac{\$0.7}{\$2.0} = \$0.6 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$ 0.1	NC
For General Ground Property and Equipment	\$ 0.2	\$+0.1
<p>This \$0.2 million Applied Maintenance Burden expense was incurred in connection with \$0.3 million Direct Maintenance expense (previous page). We estimate the \$0.1 million increase shown on the previous page would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$0.2 \times \frac{\$0.1}{\$0.3} = \$0.1 \text{ million increase}$		
Total Applied Maintenance Burden Expense	\$ 5.1	\$+1.1
Total Maintenance Expense	\$11.9	\$+2.7

TWA Ex. 4(c)(4), Exhibit F, page 24 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1961

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>AIRCRAFT SERVICING EXPENSE</u>		
A. Aircraft control personnel, trainees and instructors, rentals, landing fees, shop and servicing supplies, insurance-employee welfare and taxes-payroll	\$ 3.8	\$+1.1
This expense was incurred in connection with operating 17.8 million plane-miles (Exhibit F, Sheet 1). We estimate the 5.0 million plane-miles net increase mentioned on page 18 would have been accompanied by a proportionate increase in this Group A expense. The calculation is: $\$3.8 \times \frac{5.0}{17.8} = \$1.1 \text{ million increase}$		
B. General aircraft and traffic handling personnel, communications personnel, record keeping and statistical personnel, personnel expenses, communications purchased, other services-outside, stationery, printing and office supplies, other supplies and various miscellaneous expenses	\$ 3.1	NC
Total Aircraft Servicing Expense	\$ 6.9	\$+1.1
<u>PASSENGER SERVICE EXPENSE</u>		
A. Other flight personnel, other personnel, personnel expenses, rentals, insurance-employee welfare and taxes-payroll	\$3.2	\$+1.0
This expense was incurred in connection with operating 15.7 million plane-miles (page 14). We estimate the 5.0 million plane-miles net increase mentioned on page 18 would have been accompanied by a proportionate increase of this Group A expense. The calculation is: $\$3.1 \times \frac{5.0}{15.7} = \$1.0 \text{ million increase}$		
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside	\$ 2.7	\$+0.9
This expense was incurred in connection with passenger traffic producing \$63.9 million revenue (page 27). We estimate the \$20.4 million increase from passengers mentioned on page 27, would have been accompanied by a proportionate increase in this Group B expense. The calculation is: $\$2.7 \times \frac{\$20.4}{\$63.9} = \$0.9 \text{ million increase}$		
C. Interrupted trips expense and various miscellaneous expenses	\$ 0.2	NC

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1961

	Actual Expense With Revisions of Chapter I (Millions)	Estimated Change In Expense, For Chapter II
<u>TRAFFIC SERVICING EXPENSE</u>		
A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies, insurance-employee welfare and taxes-payroll	\$ 2.7	\$+0.7
<p>This expense was incurred in connection with \$81.7 million transportation revenues (Exhibit F, Sheet 1). We estimate the \$21.4 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$2.7 \times \frac{\$21.4}{\$81.7} = \$0.7 \text{ million increase}$		
B. Clearance, customs and duties, stationery, printing and office supplies, other expenses and various miscellaneous expenses	\$ 0.7	NC
Total Traffic Servicing Expense	\$ 3.4	\$+0.7
<u>SERVICING ADMINISTRATION EXPENSE</u>		
Total Servicing Administration Expense	\$ 1.0	\$+0.2
<p>This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$6.9 and \$3.4 million, respectively (previous page and above). We estimate the increase in Aircraft and Traffic Servicing expense of \$1.1 and \$0.7 million, respectively (previous page and above) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:</p> $\$1.0 \times \frac{(\$1.1 + \$0.7)}{(\$6.9 + \$3.4)} = \$0.2 \text{ million increase}$		
Total Servicing Administration Expense	\$ 1.0	\$+0.2

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1961

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, other expenses, insurance-employee welfare and taxes-payroll

\$ 9.8

\$+2.6

This expense was incurred in connection with \$81.7 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$21.4 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$9.8 \times \frac{\$21.4}{\$81.7} = \$2.6 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies and various miscellaneous expenses

\$ 0.8

NC

Total Reservations and Sales Expense

\$10.6

\$+2.6

Advertising and Publicity

- A. Other personnel, advertising, tariffs, schedules and timetables

\$ 5.3

\$+1.4

This expense was incurred in connection with \$81.7 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$21.4 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$5.3 \times \frac{\$21.4}{\$81.7} = \$1.4 \text{ million increase}$$

- B. Other promotional and publicity expenses and various miscellaneous expenses

\$ 0.2

NC

Total Advertising and Publicity Expense

\$ 5.5

\$+1.4

Total Promotion and Sales Expense

\$16.1

\$+4.0

CALCULATION DETAILS FOR CHAPTER IIINTERNATIONAL DIVISION, 1961

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	<u>(M i l l i o n s)</u>	
<u>GENERAL AND ADMINISTRATIVE EXPENSE</u>		
A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes - payroll	\$ 3.2	\$+0.8
<p>This expense was incurred in connection with \$81.7 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$21.4 million increase in simulated transportation revenues (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$3.2 \times \frac{\$21.4}{\$81.7} = \$0.8 \text{ million increase}$		
B. General management personnel, communications purchased, professional and technical fees and expenses, taxes-other than payroll, purchased public liability and property damage insurance, other unexpired expense credits, legal fees and expenses and various miscellaneous expenses	\$ 0.8	NC
Total General and Administrative Expense	\$ 4.0	\$+0.8
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
A. For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$11.3	\$+2.8
B. For Ground property and equipment	\$ 0.8	NC
C. For Amortization of developmental and pre-operating expense	\$ 1.6	\$+0.5
Total Depreciation and Amortization Expense	\$13.7	\$+3.3

Note: These figures were given to us by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE

\$84.6

\$+19.6

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$ 5.9 \$+3.0

This expense was incurred for operating B-331 aircraft 6.5 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 3.3 million B-331 plane-miles mentioned on page 28 would have increased this Group A expense proportionately. The calculation is:

$$\$5.9 \times \frac{3.3}{6.5} = \$3.0 \text{ million increase}$$

- B. Insurance purchased-general

\$ 0.4 \$+0.2

This expense is primarily for aircraft hull insurance for 4.4 B-331 aircraft available for commercial service (page 28). We estimate the 2.2 increase in the available number of aircraft mentioned on page 28 would have increased this insurance expense proportionately. The calculation is:

$$\$0.4 \times \frac{2.2}{4.4} = \$0.2 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 6.3 \$+3.2

For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 9.8 \$-4.0

This \$9.8 million expense was incurred for operating L-1049G aircraft 10.3 million plane-miles. We estimate the reduction of 4.2 million piston aircraft plane-miles mentioned on page 29 would have reduced piston aircraft Flying Operations expense generally in proportion to the mileage reduction. The calculation using L-1049G statistics is:

$$\$9.8 \times \frac{4.2}{10.3} = \$4.0 \text{ million decrease}$$

CALCULATION DETAILS FOR CHAPTER IIDOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
B. Insurance purchased-general	\$ 0.1	NC
Total L-1049G Flying Operations Expense	\$ 9.9	\$-4.0
For Other Aircraft and Generally Nonrevenue	\$61.9	NC
Total Flying Operations Expense	\$78.1	\$-0.8

MAINTENANCE EXPENSEDirect Maintenance ExpenseFor B-331 Jet Aircraft Flight Equipment

\$ 2.3	\$+1.2
--------	--------

This expense was incurred for operating B-331 aircraft 6.5 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 3.3 million B-331 plane-miles mentioned on page 28 would have increased this expense proportionately. The calculation is:

$$\$2.3 \times \frac{3.3}{6.5} = \$1.2 \text{ million increase}$$

For L-1049G Piston Aircraft Flight Equipment	\$ 4.4	\$-1.8
--	--------	--------

This expense was incurred for operating L-1049G aircraft 10.3 million plane miles (Exhibit F, Sheet 1). We estimate the reduction of 4.2 million piston aircraft plane-miles mentioned on page 29 would have reduced piston aircraft Direct Maintenance expense in proportion to the mileage reduction. The calculation using L-1049G statistics is:

$$\$4.4 \times \frac{4.2}{10.3} = \$1.8 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue	\$25.5	NC
For General Ground Property and Equipment	\$ 0.9	NC
Total Direct Maintenance Expense	\$33.1	\$-0.6

TWA Ex. 4(c)(4), Exhibit F, page 30 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II.

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>Applied Maintenance Burden Expense</u>		
<u>For B-331 Jet Aircraft Flight Equipment</u>	\$ 1.6	\$+0.8
<p>This \$1.6 million B-331 Applied Maintenance Burden expense was incurred in connection with \$2.3 million B-331 Direct Maintenance expense shown on the previous page. We estimated the \$1.2 million increase for B-331 Direct Maintenance (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$1.6 \times \frac{\$1.2}{\$2.3} = \$0.8 \text{ million increase}$		
<u>For L-1049G Piston Aircraft Flight Equipment</u>	\$ 4.0	\$-1.6
<p>This \$4.0 million L-1049G Applied Maintenance Burden expense was incurred in connection with the \$4.4 million L-1049G Direct Maintenance expense shown on the previous page. We estimated the \$1.8 million decrease for L-1049G Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$4.0 \times \frac{\$1.8}{\$4.4} = \$1.6 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$17.8	NC
For General Ground Property and Equipment	\$ 1.1	NC
Total Applied Maintenance Burden Expense	<u>\$24.5</u>	<u>\$-0.8</u>
Total Maintenance Expense	<u>\$57.6</u>	<u>\$-1.4</u>

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$19.0

\$-0.2

This expense was incurred in connection with operating 85.6 million plane-miles (Exhibit F, Sheet 1). We estimate the net reduction of 0.9 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate decrease in this Group A expense. The calculation is:

$$\$19.0 \times \frac{0.9}{85.6} = \$0.2 \text{ million decrease}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses

\$ 3.4

NC

Total Aircraft Servicing Expense

\$22.4

\$-0.2

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll

\$ 9.0

\$-0.1

This expense was incurred in connection with operating 82.1 million plane-miles (page 29). We estimate the net reduction of 0.9 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate decrease in this Group A expense. The calculation is:

$$\$9.0 \times \frac{0.9}{82.1} = \$0.1 \text{ million decrease}$$

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

- B. Passenger food expense, other supplies,
insurance-traffic liability and other
services-outside

\$13.2	\$+0.1
--------	--------

This expense was incurred in connection with passenger traffic revenue of \$252.2 million (Exhibit F, Sheet 1). We estimate the \$1.4 million increase in revenue from passenger traffic mentioned on page 30 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$13.2 \times \frac{\$1.4}{\$252.2} = \$0.1 \text{ million increase}$$

- C. Trainees and instructors, rentals,
interrupted trips expense and various
miscellaneous expenses

\$ 0.6	NC
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Total Passenger Service Expense

<u>\$22.8</u>	<u>NC</u>
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TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling
personnel, passenger handling personnel,
cargo handling personnel, insurance-
employee welfare, injuries, loss and
damage, taxes-payroll, other services-
outside, rentals and other supplies

\$16.0	\$+0.1
--------	--------

This expense was incurred in connection with \$276.1 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$1.5 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$16.0 \times \frac{\$1.5}{\$276.1} = \$0.1 \text{ million increase}$$

- B. Other personnel, personnel expenses,
communications purchased, light, heat,
power and water, other services-assoc-
iated companies, stationery, printing
and office supplies, insurance-traffic
liability, other expenses and various
miscellaneous expenses

\$ 1.6	NC
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Total Traffic Servicing Expense

<u>\$17.6</u>	<u>\$+0.1</u>
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CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>SERVICING ADMINISTRATION EXPENSE</u>		
Total Servicing Administration Expense	\$ 2.2	NC
<p>This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$22.4 and \$17.6 million respectively (previous page). We estimate the changes in Aircraft and Traffic Servicing expense of \$-0.2 and \$+0.1 million respectively (previous page) would have been accompanied by a proportionate change in the Servicing Administration expense. The calculation is:</p> $\$2.2 \times \frac{(\$-0.2 + \$+0.1)}{(\$22.4 + \$17.6)} = \$0.006 \text{ million decrease}$		
Total Servicing Administration Expense	\$ 2.2	NC
<u>PROMOTION AND SALES EXPENSE</u>		
Reservations and Sales		
A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, tariffs, schedules and timetables, other expenses, insurance-employee welfare and taxes-payroll	\$22.0	\$+0.1
<p>This expense was incurred in connection with \$276.1 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$1.5 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$22.0 \times \frac{\$ 1.5}{\$276.1} = \$0.1 \text{ million increase}$		
B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, stationery, printing and office supplies, other supplies and various miscellaneous expenses	\$ 2.2	NC
Total Reservations and Sales Expense	\$24.2	\$+0.1

TWA Ex. 4(c)(4), Exhibit F, page 34 of 64
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IIDOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(Millions)	

Advertising and Publicity

- A. Other personnel, advertising and tariffs,
 schedules, and timetables

\$ 6.3

NC

This expense was incurred in connection with \$276.1 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$1.5 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$6.3 \times \frac{\$1.5}{\$276.1} = \$0.03 \text{ million increase}$$

- B. Other promotional and publicity expenses,
 rentals and various miscellaneous expenses

\$ 0.6

NC

Total Advertising and Publicity Expense

\$ 6.9

NC

Total Promotion and Sales Expense

\$31.1

\$+0.1

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Record keeping and statistical personnel,
 purchasing personnel, other personnel,
 personnel expenses, uncollectible accounts,
 rentals, stationery, printing and office
 supplies, other expenses, insurance-employee
 welfare and taxes-payroll

\$ 9.1(a)

NC

This expense was incurred in connection with \$276.1 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$1.5 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$9.1(a) \times \frac{\$1.5}{\$276.1} = \$0.049 \text{ million increase}$$

- (a) This expense includes a \$715,000 uncollectible bill for the sale of piston aircraft.

TWA Ex. 4(c)(4), Exhibit F, page 35 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1961

	<u>Actual Expense With Revisions of Chapter I</u>	<u>Estimated Change In Expense, For Chapter II</u>
	<u>(M i l l i o n s)</u>	
B. General management personnel, communications purchased, professional and technical fees and expenses, other services-outside, other supplies, memberships, corporate and fiscal expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses	\$ 4.7	NC
Total General and Administrative Expense	<u>\$13.8</u>	<u>NC</u>
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
A. For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence.	\$34.5	\$+1.6
B. For ground property and equipment	\$ 4.6	NC
C. For amortization of developmental and pre-operating expense	\$ 4.2	\$+0.2
Total Depreciation and Amortization Expense	<u>\$43.3</u>	<u>\$+1.8</u>

Note: These figures were given to us by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE

\$288.9

\$-0.4

TWA Ex. 4(c)(4), Exhibit F, page 36 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1962

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, rentals, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll, and various miscellaneous expenses	\$16.3	\$+8.0
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This expense was incurred for operating B-331 aircraft 17.3 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 8.4 million B-331 plane-miles mentioned on page 15 plus the 0.1 million B-331 plane-miles that would have replaced B-331B plane-miles (Exhibit F, Sheet 1) would have proportionately increased this Group A expense. The calculation is:

$$\$16.3 \times \frac{8.4+0.1}{17.3} = \$8.0 \text{ million increase}$$

B. Insurance purchased-general	\$ 0.7	\$+0.4
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This expense is primarily for aircraft hull insurance for 9.8 B-331 aircraft available for commercial service (page 11). We estimate the 4.9 increase in the number of available aircraft mentioned on page 13 would have increased this insurance expense proportionately. The calculation is:

$$\$0.7 \times \frac{4.9}{9.8} = \$0.4 \text{ million increase}$$

Total B-331 Flying Operations Expense	\$17.0	\$+8.4
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For B-331B Jet Aircraft	\$ 0.1	\$-0.1
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Our estimates assumed the substitution of B-331 aircraft for B-331B aircraft, which eliminates this B-331B expense.

For Other Aircraft and Generally Nonrevenue	\$ 3.9	NC
Total Flying Operations Expense	\$21.0	\$+8.3

TWA Ex. 4(c)(4), Exhibit F, page 37 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1962

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

MAINTENANCE EXPENSE

Direct Maintenance Expense

For B-331 Jet Aircraft Flight Equipment

\$ 4.8

\$+2.4

This expense was incurred for operating B-331 aircraft 17.3 million plane-miles (Exhibit F, Sheet 2). We estimate the additional 8.4 plus 0.1 million B-331 plane-miles (Flying Operations, previous page) would have increased this expense proportionately. The calculation is:

$$\$4.8 \times \frac{8.5}{17.3} = \$2.4 \text{ million increase}$$

For B-331B Jet Aircraft Flight Equipment

#

NC

For Other Aircraft and Generally Nonrevenue

\$ 1.7

NC

For General Ground Property and Equipment

\$ 0.3

\$+0.1

This expense was incurred in connection with operations that produced \$100.8 million transportation revenue (Exhibit F, Sheet 1). We estimate the additional B-331 aircraft would have produced an increase of \$31.0 million simulated transportation revenue (Exhibit F, Sheet 2). We select \$0.1 million increase in Direct Maintenance expense for Ground Property and Equipment to reflect a cost increase that may have taken place.

Total Direct Maintenance Expense

\$ 6.8

\$+2.5

Applied Maintenance Burden Expense

For B-331 Jet Aircraft Flight Equipment

\$ 3.4

\$+1.7

This \$3.4 million B-331 Applied Maintenance Burden expense was incurred in connection with \$4.8 million B-331 Direct Maintenance expense shown above. We estimate the \$2.4 million increase for B-331 Direct Maintenance (above) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:

$$\$ 3.4 \times \frac{\$2.4}{\$4.8} = \$1.7 \text{ million increase}$$

For B-331B Jet Aircraft Flight Equipment

#

NC

For Other Aircraft and Generally Nonrevenue

\$ 1.0

NC

TWA Ex. 4(c)(4), Exhibit F, page 38 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1962

	Actual Expense With Revisions of Chapter I <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter II
For General Ground Property and Equipment	\$ 0.2	\$+0.1
<p>This \$0.2 million Applied Maintenance Burden expense was incurred in connection with \$0.3 million Direct Maintenance expense (previous page). We estimate the \$0.1 million increase shown on the previous page would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$0.2 \times \frac{\$0.1}{\$0.3} = \$0.1 \text{ million increase}$		
Total Applied Maintenance Burden Expense	<u>\$ 4.6</u>	<u>\$+1.8</u>
Total Maintenance Expense	<u>\$11.4</u>	<u>\$+4.3</u>

AIRCRAFT SERVICING EXPENSE

A. Aircraft control personnel, trainees and instructors, rentals, landing fees, shop and servicing supplies, insurance-employee welfare and taxes-payroll	\$ 4.6	\$+1.9
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This expense was incurred in connection with operating 20.2 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 8.4 million plane-miles (page 18) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.6 \times \frac{8.4}{20.2} = \$1.9 \text{ million increase}$$

B. General aircraft and traffic handling personnel, communications personnel, record keeping and statistical personnel, personnel expenses, communications purchased, other services-outside, other supplies and various miscellaneous expenses	\$ 3.0	NC
Total Aircraft Servicing Expense	<u>\$ 7.6</u>	<u>\$+1.9</u>

CALCULATION OF DETAILS OF CHAPTER II

INTERNATIONAL DIVISION, 1962

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, rentals, insurance-employee welfare and taxes-payroll

\$ 4.1	\$+1.9
--------	--------

This expense was incurred in connection with operating 17.7 million plane-miles (page 14). We estimate the additional 8.4 million plane-miles (page 18) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.1 \times \frac{8.4}{17.7} = \$1.9 \text{ million increase}$$

- B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside

\$ 2.6	\$+1.0
--------	--------

This expense was incurred in connection with passenger traffic revenue of \$77.5 million (page 27). We estimate the \$29.5 million increase in revenue from passenger traffic mentioned on page 27 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$2.6 \times \frac{\$29.5}{\$77.5} = \$1.0 \text{ million increase}$$

- C. Interrupted trips expense and various miscellaneous expenses

\$ 0.2	NC
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Total Passenger Service Expense

\$ 6.9	\$+2.9
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TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies, insurance-employee welfare and taxes-payroll

\$ 3.3	\$+1.0
--------	--------

This expense was incurred in connection with \$100.8 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$31.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$3.3 \times \frac{\$31.0}{\$100.8} = \$1.0 \text{ million increase}$$

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TWA Ex. 4(c)(4), Exhibit F, page 40 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1962

	<u>Actual Expense With Revisions of Chapter I</u>	<u>Estimated Change In Expense, For Chapter II</u>
	<u>(M i l l i o n s)</u>	
B. Clearance, customs and duties, station- ery, printing and office supplies, other expenses and various miscellaneous expenses	\$ 0.7	NC
Total Traffic Servicing Expense	<u>\$ 4.0</u>	<u>\$+1.0</u>

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense	\$ 0.9	\$+0.2
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This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$7.6 and \$4.0 million, respectively (previous page). We estimate the addition in Aircraft and Traffic Servicing expense of \$1.9 and \$1.0 million respectively (previous page and above) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:

$$\$0.9 \times \frac{(\$1.9 + \$1.0)}{(\$7.6 + \$4.0)} = \$0.2 \text{ million increase}$$

Total Servicing Administration Expense	<u>\$ 0.9</u>	<u>\$+0.2</u>
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PROMOTION AND SALES EXPENSE

Reservations and Sales

A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, other expenses; insurance-employee welfare and taxes-payroll	\$11.4	\$+3.5
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This expense was incurred in connection with \$100.8 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$31.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$11.4 \times \frac{\$ 31.0}{\$100.8} = \$3.5 \text{ million increase}$$

CALCULATION DETAILS OF CHAPTER II

INTERNATIONAL DIVISION, 1962

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
B. Communications personnel, general management personnel, other services-outside, other supplies, stationery, printing and office supplies and various miscellaneous expenses	\$ 0.9	NC
Total Reservations and Sales Expense	\$12.3	\$+3.5
Advertising and Publicity		
A. Other personnel advertising, tariffs, schedules and timetables	\$ 6.1	\$+1.9
This expense was incurred in connection with \$100.8 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$31.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:		
	$\$6.1 \times \frac{\$ 31.0}{\$100.8} = \$1.9 \text{ million increase}$	
B. Other promotional and publicity expenses and various miscellaneous expenses	\$ 0.3	NC
Total Advertising and Publicity Expense	\$ 6.4	\$+1.9
Total Promotion and Sales Expense	\$18.7	\$+5.4

GENERAL AND ADMINISTRATIVE EXPENSE

A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll	\$ 3.4	\$+1.0
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This expense was incurred in connection with \$100.8 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$31.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$3.4 \times \frac{\$ 31.0}{\$100.8} = \$1.0 \text{ million increase}$$

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TWA Ex. 4(c)(4), Exhibit F, page 42 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1962

	<u>Actual Expense With Revisions of Chapter I</u>	<u>Estimated Change In Expense, For Chapter II</u>
	<u>(M i l l i o n s)</u>	
B. General management personnel, communications purchased, professional and technical fees and expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses	\$ 1.0	NC
Total General and Administrative Expense	<u>\$ 4.4</u>	<u>\$+1.0</u>
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
A. For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$ 9.7	\$+3.0
B. For ground property and equipment	\$ 0.8	NC
C. For amortization of developmental and pre-operating expense	\$ 1.4	\$+0.5
Total Depreciation and Amortization Expense	<u>\$11.9</u>	<u>\$+3.5</u>

Note: These figures were given to us by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE

\$86.8

\$+28.5

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1962

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

FLYING OPERATIONS

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$ 3.2	\$+1.6
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This expense was incurred for operating B-331 aircraft 3.0 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 1.4 million B-331 plane-miles mentioned on page 28 (plus 0.1 million plane-miles to replace B-331B plane-miles eliminated. The B-331B plane-miles were too small to record (Exhibit F, Sheet 1)) would have increased this Group A expense proportionately. The calculation is:

$$\$3.2 \times \frac{1.5}{3.0} = \$1.6 \text{ million increase}$$

- B. Insurance purchased-general

\$ 0.1	\$+0.1
--------	--------

This expense is primarily for aircraft hull insurance for 2.2 B-331 aircraft available for commercial service (page 28). We estimate the 1.1 increase in the available number of aircraft mentioned on page 13 would have increased this insurance expense proportionately. The calculation is:

$$\$0.1 \times \frac{1.1}{2.2} = \$0.1 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 3.3	\$+1.7
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For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 9.8	\$-0.9
--------	--------

This expense was incurred for operating L-1049G aircraft 10.0 million plane-miles (Exhibit F, Sheet 1). We estimate a reduction of 0.9 million L-1049G plane-miles as mentioned on page 29 would have decreased this Group A expense proportionately. The calculation is:

$$\$9.8 \times \frac{0.9}{10.0} = \$0.9 \text{ million decrease}$$

TWA Ex. 4(c)(4), Exhibit F, page 44 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
B. Insurance purchased-general	#	NC
Total L-1049G Flying Operations Expense	\$ 9.8	\$-0.9
For B-331B Jet Aircraft	\$ 0.1	\$-0.1
Our estimates assumed the substitution of B-331 aircraft for B-331B aircraft, which eliminates this B-331B expense.		
For Other Aircraft and Gen-erally Nonrevenue	\$69.2	NC
Total Flying Operations Expense	\$82.4	\$+0.7

MAINTENANCE EXPENSE

Direct Maintenance Expense

For B-331 Jet Aircraft Flight Equipment	\$ 1.0	\$+0.5
---	--------	--------

This expense was incurred for operating B-331 aircraft 3.0 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 1.4 million B-331 plane-miles mentioned on page 28 (plus 0.1 million plane miles to replace B-331B plane-miles eliminated (Flying Operations, page 43) would have increased this expense proportionately. The calculation is:

$$\$1.0 \times \frac{1.5}{3.0} = \$0.5 \text{ million increase}$$

For L-1049G Piston Aircraft Flight Equipment	\$ 4.9	\$-0.4
--	--------	--------

This expense was incurred for operating L-1049G aircraft 10.0 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 0.9 million piston aircraft plane-miles mentioned on page 29 would have reduced piston aircraft Direct Maintenance expense in proportion to the mileage reduction. The calculation using L-1049G statistics is:

$$\$4.9 \times \frac{0.9}{10.0} = \$0.4 \text{ million decrease}$$

For B-331B Jet Aircraft Flight Equipment	#	NC
For Other Aircraft and Generally Nonrevenue	\$29.2	NC
For General Ground Property and Equipment	\$ 1.6	NC
Total Direct Maintenance Expense	\$36.7	\$+0.1

TWA Ex. 4(c)(4), Exhibit F, page 45 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1962

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

Applied Maintenance Burden Expense

For B-331 Jet Aircraft Flight Equipment

\$ 1.0

\$+0.5

This \$1.0 million B-331 Applied Maintenance Burden expense was incurred in connection with \$1.0 million B-331 Direct Maintenance expense shown on the previous page. We estimated the \$0.5 million increase for B-331 Direct Maintenance (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:

$$\$1.0 \times \frac{\$0.5}{\$1.0} = \$0.5 \text{ million increase}$$

For L-1049G Piston Aircraft Flight Equipment

\$ 3.7

\$-0.3

This \$3.7 million L-1049G Applied Maintenance Burden expense was incurred in connection with the \$4.9 million L-1049G Direct Maintenance expense shown on the previous page. We estimated the \$0.4 million decrease for L-1049G Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:

$$\$3.7 \times \frac{\$0.4}{\$4.9} = \$0.3 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue

\$18.8

NC

For General Ground Property and Equipment

\$ 1.9

NC

Total Applied Maintenance Burden Expense

\$25.4

\$+0.2

Total Maintenance Expense

\$62.1

\$+0.3

TWA Ex. 4(c)(4), Exhibit F, page 46 of 64
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IIDOMESTIC DIVISION, 1962

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$20.4

\$+0.1

This expense was incurred in connection with operating 89.9 million plane-miles (Exhibit F, Sheet 1). We estimate the net additional 0.5 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$20.4 \times \frac{0.5}{89.9} = \$0.1 \text{ million increase}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses

\$ 3.3

NC

Total Aircraft Servicing Expense

\$23 7

\$+0.1

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll

\$ 9.9

\$+0.1

This expense was incurred in connection with operating 87.9 million plane-miles (page 29). We estimate the net additional 0.5 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$9.9 \times \frac{0.5}{87.9} = \$0.1 \text{ million increase}$$

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside	\$12.3	\$+0.1
This expense was incurred in connection with passenger traffic revenue of \$273.0 million (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in revenue from passenger traffic mentioned on page 30 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:		
	$\$12.3 \times \frac{\$2.0}{\$273.0} = \$0.1 \text{ million increase}$	
C. Trainees and instructors, rentals, interrupted trips expense and various miscellaneous expenses	\$ 0.7	NC
Total Passenger Service Expense	\$22.9	\$+0.2

TRAFFIC SERVICING EXPENSE

A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, insurance-employee welfare, injuries, loss and damage, taxes-payroll, other services-outside, rentals and other supplies	\$20.1	\$+0.1
This expense was incurred in connection with \$298.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.1 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:		
	$\$20.1 \times \frac{\$2.1}{\$298.5} = \$0.1 \text{ million increase}$	
B. Other personnel, personnel expenses, trainees and instructors, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, insurance-traffic liability, other expenses and various miscellaneous expenses	\$ 1.6	NC
Total Traffic Servicing Expense	\$21.7	\$+0.1

TWA Ex. 4(c)(4), Exhibit F, page 48 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
<u>SERVICING ADMINISTRATION EXPENSE</u>		
Total Servicing Administration Expense	\$ 2.4	NC
This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$23.7 and \$21.7 million, respectively (shown previously). We estimate the addition in Aircraft and Traffic Servicing expense of \$0.1 and \$0.1 million, respectively (previous pages) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:		
	$\$2.4 \times \frac{(\$ 0.1 + \$ 0.1)}{(\$23.7 + \$21.7)} = \$0.01 \text{ million increase}$	
Total Servicing Administration Expense	\$ 2.4	NC
<u>PROMOTION AND SALES EXPENSE</u>		
Reservations and Sales		
A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, tariffs, schedules and timetables, other expenses, insurance-employee welfare and taxes-payroll		
	\$23.4	\$+0.2
This expense was incurred in connection with \$298.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.1 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:		
	$\$23.4 \times \frac{\$ 2.1}{\$298.5} = \$0.2 \text{ million increase}$	
B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, stationery, printing and office supplies, trainees and instructors, other supplies and various miscellaneous expenses		
	\$ 2.4	NC
Total Reservations and Sales Expense	\$25.8	\$+0.2

TWA Ex. 4(c)(4), Exhibit F, page 49 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	<u>(M i l l i o n s)</u>	
Advertising and Publicity		
A. Other personnel, advertising, tariffs, schedules and timetables	\$ 8.2	\$+0.1
<p>This expense was incurred in connection with \$298.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.1 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$8.2 \times \frac{\$2.1}{\$298.5} = \$0.1 \text{ million increase}$		
B. Personnel expenses, other promotional and publicity expenses, rentals and various miscellaneous expenses	\$ 0.7	NC
Total Advertising and Publicity Expense	<u>\$ 8.9</u>	<u>\$+0.1</u>
Total Promotion and Sales Expense	\$34.7	\$+0.3

GENERAL AND ADMINISTRATIVE EXPENSE

A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, station- ery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll	\$ 7.5	\$+0.1
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This expense was incurred in connection with \$298.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.1 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$7.5 \times \frac{\$2.1}{\$298.5} = \$0.1 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit F, page 50 of 64
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IIDOMESTIC DIVISION, 1962

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

B. General management personnel, communications purchased, professional and technical fees and expenses, other services-outside, other supplies, memberships, corporate and fiscal expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses

\$ 4.2

NC

Total General and Administrative Expense

\$11.7\$+0.1DEPRECIATION AND AMORTIZATION EXPENSE

A. For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence

\$35.1

\$+0.7

B. For ground property and equipment

\$ 4.8

NC

C. For amortization of developmental and pre-operating expense

\$ 5.2

\$+0.1

Total Depreciation and Amortization Expense

\$45.1\$+0.8

Note: These figures were given to us by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE\$306.7\$+2.6

TWA Ex. 4(c)(4), Exhibit F, page 51 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1963

<u>Actual Expense With Revisions of Chapter I</u>	<u>Estimated Change In Expense, For Chapter II</u>
<u>(M i l l i o n s)</u>	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, rentals, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$16.0

\$+8.7

This expense was incurred for operating B-331 aircraft 16.8 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 9.1 million B-331 plane-miles (estimated additional 1.5 million B-331 plane-miles (page 15) plus 7.6 million plane-miles (Exhibit F, Sheet 1) to replace the B-331B plane-miles eliminated) would have increased this Group A expense proportionately. The calculation is:

$$\$16.0 \times \frac{9.1}{16.8} = \$8.7 \text{ million increase}$$

- B. Insurance purchased-general

\$ 0.7

\$+0.4

This expense is primarily for aircraft hull insurance for 9.9 B-331 aircraft available for commercial service (page 11). We estimate the 5.2 increase in the number of available aircraft mentioned on page 13 would have increased this insurance expense proportionately. The calculation is:

$$\$0.7 \times \frac{5.2}{9.9} = \$0.4 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$16.7

\$+9.1

For B-331B Jet Aircraft

\$10.4

\$-10.4

Our estimates assumed the substitution of B-331 aircraft for B-331B aircraft, which eliminates this B-331B expense.

For Other Aircraft and Generally Nonrevenue

\$ 4.9

NC

Total Flying Operations Expense

\$32.0

\$-1.3

TWA Ex. 4(c)(4), Exhibit F, page 52 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IIINTERNATIONAL DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

MAINTENANCE EXPENSEDirect Maintenance Expense

For B-331 Jet Aircraft Flight Equipment	\$ 3.3	\$+1.8
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This expense was incurred for operating B-331 aircraft 16.8 million plane-miles (Exhibit F, Sheet 1). We estimate the 9.1 million (7.6 plus 1.5 million, Flying Operations on previous page) additional plane-miles (page 155) would have increased this expense proportionately. The calculation is:

$$\$3.3 \times \frac{9.1}{16.8} = \$1.8 \text{ million increase}$$

For B-331B Jet Aircraft Flight Equipment	\$ 1.0	\$-1.0
--	--------	--------

Our estimates assumed the substitution of B-331 aircraft for B-331B aircraft, which eliminates this B-331B expense.

For Other Aircraft and Generally Nonrevenue	\$ 1.0	NC
---	--------	----

For General Ground Property and Equipment	\$ 0.4	NC
---	--------	----

Total Direct Maintenance Expense	\$ 5.7	\$+0.8
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Applied Maintenance Burden Expense

For B-331 Jet Aircraft Flight Equipment	\$ 3.1	\$+1.7
---	--------	--------

This \$3.1 million B-331 Applied Maintenance Burden expense was incurred in connection with \$3.3 million B-331 Direct Maintenance expense shown above. We estimate the \$1.8 million increase for B-331 Direct Maintenance (above) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:

$$\$3.1 \times \frac{\$1.8}{\$3.3} = \$1.7 \text{ million increase}$$

For B-331B Jet Aircraft Flight Equipment	\$ 0.4	\$-0.4
--	--------	--------

Our estimates assumed the substitution of B-331 aircraft for B-331B aircraft, which eliminates this B-331B expense.

For Other Aircraft and Generally Nonrevenue	\$ 0.7	NC
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For General Ground Property and Equipment	\$ 0.3	NC
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Total Applied Maintenance Burden Expense	\$ 4.5	\$+1.3
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Total Maintenance Expense	\$10.2	\$+2.1
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IWA EX. 4(c)(4), Exhibit F, page 53 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

AIRCRAFT SERVICING EXPENSE

- A. Aircraft control personnel, trainees and instructors, rentals, landing fees, shop and servicing supplies, insurance-employee welfare and taxes-payroll

\$ 5.8	\$+0.3
--------	--------

This expense was incurred in connection with operating 27.3 million plane-miles (Exhibit F, Sheet 1). We estimate the additional 1.5 million plane-miles (page 18) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$5.8 \times \frac{1.5}{27.3} = \$0.3 \text{ million increase}$$

- B. General aircraft and traffic handling personnel, communications personnel, record keeping and statistical personnel, personnel expenses, communications purchased, other services-outside, other supplies and various miscellaneous expenses

\$ 2.4	NC
<u>\$ 8.2</u>	<u>\$+0.3</u>

Total Aircraft Servicing Expense

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, rentals, insurance-employee welfare and taxes-payroll

\$ 5.7	\$+0.3
--------	--------

This expense was incurred in connection with operating 24.7 million plane-miles (page 14). We estimate the additional 1.5 million plane-miles (page 18) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$5.7 \times \frac{1.5}{24.7} = \$0.3 \text{ million increase}$$

- B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside

\$ 3.8	\$+0.2
--------	--------

This expense was incurred in connection with passenger traffic revenue of \$105.0 million (page 27). We estimate the \$5.3 million increase in revenue from passenger traffic mentioned on page 27 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$3.8 \times \frac{5.3}{105.0} = \$0.2 \text{ million increase}$$

- C. Various miscellaneous expenses

\$ 0.2	NC
<u>\$ 9.7</u>	<u>\$+0.5</u>

Total Passenger Service Expense

TWA Ex. 4(c)(4), Exhibit F, page 54 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(M i l l i o n s)</u>	

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies, insurance-employee welfare and taxes-payroll

\$ 4.2	\$+0.2
--------	--------

This expense was incurred in connection with \$131.3 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$5.6 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.2 \times \frac{\$5.6}{\$131.3} = \$0.2 \text{ million increase}$$

- B. Clearance, customs and duties, stationery, printing and office supplies, insurance-traffic liability, injuries, loss and damage, other expenses and various miscellaneous expenses

\$ 1.0	NC
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Total Traffic Servicing Expense

\$ 5.2	\$+0.2
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SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense

\$ 1.3	NC
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This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$8.2 and \$5.2 million, respectively (previous page and above). We estimate the addition in Aircraft and Traffic Servicing expense of \$0.3 and \$0.2 million, respectively (previous page and above) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:

$$\$1.3 \times \frac{(\$0.3 + \$0.2)}{(\$8.2 + \$5.2)} = \$0.048 \text{ million increase}$$

Total Servicing Administration Expense

\$ 1.3	NC
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CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, other expenses, insurance-employee welfare, taxes-payroll

\$14.0

\$+0.6

This expense was incurred in connection with \$131.3 million transportation revenue (Exhibit F Sheet 1). We estimate the \$5.6 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$14.0 \times \frac{\$ 5.6}{\$131.3} = \$0.6 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies and various miscellaneous expenses

\$ 1.0

NC

Total Reservations and Sales Expense

\$15.0

\$+0.6

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables

\$ 6.5

\$+0.3

This expense was incurred in connection with \$131.3 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$5.6 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$6.5 \times \frac{\$ 5.6}{\$131.3} = \$0.3 \text{ million increase}$$

- B. Various miscellaneous expenses

\$ 0.2

NC

Total Advertising and Publicity Expense

\$ 6.7

\$+0.3

Total Promotion and Sales Expense

\$21.7

\$+0.9

(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

INTERNATIONAL DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

GENERAL AND ADMINISTRATIVE EXPENSE

A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll	\$ 4.4	\$+0.2
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This expense was incurred in connection with \$131.3 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$5.6 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.4 \times \frac{\$5.6}{\$131.3} = \$0.2 \text{ million increase}$$

B. General management personnel, communications purchased, professional and technical fees and expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses	\$ 1.1	NC
Total General and Administrative Expense	<u>\$ 5.5</u>	<u>\$+0.2</u>

DEPRECIATION AND AMORTIZATION EXPENSE

A. For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence.	\$ 8.8	\$+3.0
B. For ground property and equipment	\$ 0.9	NC
C. For amortization of developmental and pre-operating expense	\$ 1.8	NC
Total Depreciation and Amortization Expense	<u>\$11.5</u>	<u>\$+3.0</u>

Note: These figures were given to us by Price Waterhouse & Co.

<u>OPERATING EXPENSE</u>	<u>\$105.3</u>	<u>\$+5.9</u>
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CALCULATION DETAILS FOR CHAPTER IIDOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$ 3.2	\$+1.3
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This expense was incurred for operating B-331 aircraft 2.8 million plane-miles (page 28). We estimate the additional 1.1 million B-331 plane-miles (estimated additional 0.7 million B-331 plane-miles (page 28) plus 0.4 million plane-miles (Exhibit F, Sheet 1) to replace the B-331B plane-miles eliminated) would have increased this Group A expense proportionately. The calculation is:

$$\$3.2 \times \frac{1.1}{2.8} = \$1.3 \text{ million increase}$$

- B. Insurance purchased-general

\$ 0.1	NC
--------	----

This expense is primarily for aircraft hull insurance for 2.1 B-331 aircraft available for commercial service (page 28). We estimate the 0.8 increase in the number of available aircraft mentioned on page 13 would have increased this insurance expense proportionately. The calculation is:

$$\$0.1 \times \frac{0.8}{2.1} = \$0.04 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 3.3	\$+1.3
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For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 9.7	\$-0.2
--------	--------

This expense was incurred for operating L-1049G aircraft 9.4 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 0.2 million L-1049G plane-miles mentioned on page 29 would have decreased this Group A expense proportionately. The calculation is:

$$\$9.7 \times \frac{0.2}{9.4} = \$0.2 \text{ million decrease}$$

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TWA Ex. 4(c)(4), Exhibit F, page 58 of 64
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1963

	<u>Actual Expense With Revisions of Chapter I</u> (M i l l i o n s)	<u>Estimated Change In Expense, For Chapter II</u>
B. Insurance purchased-general	#	NC
Total L-1049G Flying Operations Expense	\$ 9.7	\$-0.2
For B-331B Jet Aircraft	\$ 0.7	\$-0.7
Our estimates assumed the substitution of B-331 aircraft for B-331B aircraft, which eliminates this B-331B expense.		
For Other Aircraft and Generally Nonrevenue	\$74.2	NC
Total Flying Operations Expense	\$87.9	\$+0.4
<u>MAINTENANCE EXPENSE</u>		
<u>Direct Maintenance Expense</u>		
For B-331 Jet Aircraft Flight Equipment	\$ 0.4	\$+0.2
This expense was incurred for operating B-331 aircraft 2.8 million plane-miles (page 28). We estimate the 1.1 mil- lion (0.7 plus 0.4 million, Flying Operations, page 57) additional plane-miles would have increased this expense proportionately. The calculation is:		
$\$0.4 \times \frac{1.1}{2.8} = \$0.2 \text{ million increase}$		
For L-1049G Piston Aircraft Flight Equipment	\$ 4.9	\$-0.1
This expense was incurred for operating L-1049G aircraft 9.4 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 0.2 million L-1049G plane-miles mentioned on page 29 would have decreased this expense propor- tionately. The calculation is:		
$\$4.9 \times \frac{0.2}{9.4} = \$0.1 \text{ million decrease}$		
For B-331B Jet Aircraft Flight Equipment	#	NC
For Other Aircraft and Generally Nonrevenue	\$23.1	NC
For General Ground Property and Equipment	\$ 2.0	NC
Total Direct Maintenance Expense	\$30.4	\$+0.1

TWA Ex. 4(c)(4), Exhibit F, page 59 of 64
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CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1963

	<u>Actual Expense With Revisions of Chapter I</u>	<u>Estimated Change In Expense, For Chapter II</u>
	<u>(M i l l i o n s)</u>	
<u>Applied Maintenance Burden Expense</u>		
For B-331 Jet Aircraft Flight Equipment	\$ 0.3	\$+0.2
<p>This \$0.3 million B-331 Applied Maintenance Burden expense was incurred in connection with \$0.4 million B-331 Direct Maintenance expense shown on the previous page. We estimate the \$0.2 million increase for B-331 Direct Maintenance (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$0.3 \times \frac{\$0.2}{\$0.4} = \$0.2 \text{ million increase}$		
For L-1049G Piston Aircraft Flight Equipment	\$ 3.5	\$-0.1
<p>This \$3.5 million L-1049G Applied Maintenance Burden expense was incurred in connection with \$4.9 million L-1049G Direct Maintenance expense shown on the previous page. We estimate the \$0.1 million decrease for L-1049G Direct Maintenance (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$3.5 \times \frac{\$0.1}{\$4.9} = \$0.1 \text{ million decrease}$		
For B-331B Jet Aircraft Flight Equipment	#	NC
For Other Aircraft and Generally Nonrevenue	\$17.8	NC
For General Ground Property and Equipment	\$ 2.2	NC
Total Applied Maintenance Burden Expense	<u>\$23.8</u>	<u>\$+0.1</u>
Total Maintenance Expense	<u>\$54.2</u>	<u>\$+0.2</u>

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
<u>(Millions)</u>	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$23.2	\$+0.1
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This expense was incurred in connection with operating 99.6 million plane-miles (Exhibit F, Sheet 1). We estimate the net additional 0.5 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$23.2 \times \frac{0.5}{99.6} = \$0.1 \text{ million increase}$$

- B. Communications personnel, communications purchased, light, heat, power and water, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses

\$ 3.3	NC
--------	----

Total Aircraft Servicing Expense

\$26.5	\$+0.1
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PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare, taxes-payroll and rentals

\$11.5	\$+0.1
--------	--------

This expense was incurred in connection with operating 97.5 million plane-miles (page 29). We estimate the additional 0.5 million plane-miles (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$11.5 \times \frac{0.5}{97.5} = \$0.1 \text{ million increase}$$

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1963

	<u>Actual Expense With Revisions of Chapter I</u>	<u>Estimated Change In Expense, For Chapter II</u>
	<u>(M i l l i o n s)</u>	
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside	\$14.8	\$+0.1
<p>This expense was incurred in connection with passenger traffic revenue of \$311.8 million (Exhibit F, Sheet 1). We estimate the \$1.9 million increase in revenue from passenger traffic mentioned on page 30 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:</p> $\$14.8 \times \frac{\$1.9}{\$311.8} = \$0.1 \text{ million increase}$		
C. Trainees and instructors, interrupted trips expense and various miscellaneous expenses	\$ 0.5	NC
Total Passenger Service Expense	<u>\$26.8</u>	<u>\$+0.2</u>

TRAFFIC SERVICING EXPENSE

A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, insurance- employee welfare, injuries, loss and damage, taxes-payroll, other services- outside, rentals and other supplies	\$22.5	\$+0.1
<p>This expense was incurred in connection with \$341.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$22.5 \times \frac{\$2.0}{\$341.5} = \$0.1 \text{ million increase}$		
B. Communications personnel, other person- nel, personnel expenses, communications purchased, light, heat, power and water, stationery, printing and office supplies, insurance-traffic liability, other expenses and various miscellaneous expenses	\$ 1.7	NC
Total Traffic Servicing Expense	<u>\$24.2</u>	<u>\$+0.1</u>

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CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
(M i l l i o n s)	

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense	\$ 2.9	NC
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This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$26.5 and \$24.2 million, respectively (previous pages). We estimate the addition in Aircraft and Traffic Servicing expense of \$0.1 and \$0.1 million, respectively (previous pages) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:

$$\$2.9 \times \frac{(\$0.1 + \$0.1)}{(\$26.5 + \$24.2)} = \$0.01 \text{ million increase}$$

Total Servicing Administration Expense	\$ 2.9	NC
--	--------	----

PROMOTION AND SALES EXPENSE

Reservations and Sales

<p>A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, tariffs, schedules and timetables, other expenses, insurance-employee welfare and taxes-payroll</p>	\$27.7	\$+0.2
---	--------	--------

This expense was incurred in connection with \$341.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$27.7 \times \frac{\$2.0}{\$341.5} = \$0.2 \text{ million increase}$$

<p>B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, stationery, printing and office supplies, trainees and instructors, other supplies and various miscellaneous expenses</p>	\$ 2.6	NC
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Total Reservations and Sales Expense	\$30.3	\$+0.2
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Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1963

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	<u>(M i l l i o n s)</u>	
Advertising and Publicity		
A. Other personnel, advertising and tariffs, schedules and timetables	\$10.8	\$+0.1
<p>This expense was incurred in connection with \$341.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$10.8 \times \frac{\$ 2.0}{\$341.5} = \$0.1 \text{ million increase}$		
B. Personnel expenses, other promotional and publicity expenses, rentals and various miscellaneous expenses	\$ 0.7	NC
Total Advertising and Publicity Expense	<u>\$11.5</u>	<u>\$+0.1</u>
Total Promotion and Sales Expense	<u>\$41.8</u>	<u>\$+0.3</u>

GENERAL AND ADMINISTRATIVE EXPENSE

A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll	\$ 8.5	NC
---	--------	----

This expense was incurred in connection with \$341.5 million transportation revenue (Exhibit F, Sheet 1). We estimate the \$2.0 million increase in simulated transportation revenue (Exhibit F, Sheet 2) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$8.5 \times \frac{\$ 2.0}{\$341.5} = \$0.049 \text{ million increase}$$

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CALCULATION DETAILS FOR CHAPTER II

DOMESTIC DIVISION, 1963

	Actual Expense With Revisions of Chapter I	Estimated Change In Expense, For Chapter II
	(M i l l i o n s)	
B. General management personnel, communica- tions purchased, light, heat, power and water, professional and technical fees and expenses, other services-outside, other supplies, memberships, corporate and fiscal expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscel- laneous expenses	\$ 4.4	NC
Total General and Administrative Expense	<u>\$12.9</u>	<u>NC</u>
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
A. For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$31.6	\$+0.5
B. For ground property and equipment	\$ 3.9	NC
C. For amortization of developmental and pre- operating expense	\$ 4.6	\$+0.1
Total Depreciation and Amortization Expense	<u>\$40.1</u>	<u>\$+0.6</u>
 <u>Note:</u> These figures were given to us by Price Waterhouse & Co.		
<u>TOTAL OPERATING EXPENSE</u>	<u>\$317.3</u>	<u>\$+1.9</u>

CALCULATION DETAILS FOR OPERATING EXPENSE CHANGES, CHAPTER III
FOR EARLIER RECEIPT OF B-131 AND B-331 AIRCRAFT

For our calculation of operating expense changes that would have occurred if TWA had earlier receipt of fifteen B-131 and eighteen B-331 jet aircraft as mentioned on page 40, we used operating statistics mentioned in the text of Chapter III, certain operating statistics and expense estimates from Exhibit F, expense data from CAB Form 41 annual reports and the following statistics.

	<u>Millions</u>
<u>Actual Plane-Miles, Domestic Division, 1959</u>	
L-1649A (including cargo plane-miles)	8.6
All passenger (cargo plane-miles not included)	94.2
Division total (including cargo plane-miles)	96.0

These are calculated annual summaries of figures shown in Monthly Operating Statistics, Schedule 3-70M.

<u>Actual Passenger Revenues, Domestic Division, 1959</u>	\$252.7
<u>Actual Transportation Revenues, Domestic Division, 1959</u>	\$272.4

These are calculated from TWA December Financial Reports, Schedule 2-2M.

<u>Estimated Net Decrease in Domestic Division Plane-Miles, 1960,</u> <u>Calculated from Estimates on Page 44, i.e.,</u>	-0.4
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1.0 million additional B-331 plane-miles minus 1.4 million reduction of piston aircraft plane-miles = 0.4 million net change.

<u>Simulated Transportation Revenue Increase</u>	<u>Domestic</u> <u>Division</u> <u>(Millions)</u>	<u>International</u> <u>Division</u> <u>(Millions)</u>
1959 Increase	\$7.0	\$4.4
1960 Increase	\$1.2	\$6.4

These are calculated by apportioning the additional revenue estimated for mail, express, freight and excess baggage stated on page 48, to each Division in accordance with the additional passenger revenue estimated for each Division (also shown on page 48).

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	<u>Millions</u>
<u>Estimated Chapter II L-1649A International Division Plane-Miles, 1959</u>	16.9
Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 17)	
$17.0 - 0.1 = 16.9$	
<u>Estimated Chapter II B-331 Domestic Division Plane-Miles, 1960</u>	5.8
Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 28)	
$3.8 + 2.0 = 5.8$	
<u>Estimated Chapter II L-1649A Domestic Division Plane-Miles, 1960</u>	4.9
Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 29)	
$7.8 - 2.9 = 4.9$	
<u>Estimated Chapter II Total Plane-Miles Including Cargo Service, Domestic Division, 1960</u>	90.1
Actual (Exhibit F, Sheet 1) plus Chapter II Net Reduction (Exhibit F, Sheet 2)	
$91.0 - 0.9 = 90.1$	
<u>Estimated Chapter II Plane-Miles (Passenger Service Only) Domestic Division, 1960</u>	87.0
Actual (pg. 29) plus Chapter II Net Reduction (Exhibit F, Sheet 2)	
$87.9 - 0.9 = 87.0$	
<u>Estimated Chapter II Passenger Revenues, Domestic Division, 1960</u>	\$255.2
Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 30)	
$\$253.3 + \$1.9 = \$255.2$	
<u>Simulated Chapter II Transportation Revenues, Domestic Division, 1960</u>	\$277.5
Actual (Exhibit F, Sheet 1) plus Chapter II Calculation (Exhibit F, Sheet 2)	
$\$275.5 + \$2.0 = \$277.5$	
<u>Estimated Chapter II B-331 International Division Plane-Miles, 1960</u>	17.0
Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 15)	
$10.7 + 6.3 = 17.0$	
<u>Estimated Chapter II L-1649A International Division Plane-Miles, 1960</u>	1.7
Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 17)	
$6.8 - 5.1 = 1.7$	
<u>Estimated Chapter II Total Plane-Miles Including Cargo Service, International Division, 1960</u>	20.4
Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 18)	
$19.2 + 1.2 = 20.4$	
<u>Estimated Chapter II Plane-Miles (Passenger Service Only) International Division, 1960</u>	18.9
Actual (pg. 14) plus Chapter II Estimate (pg. 18)	
$17.7 + 1.2 = 18.9$	
<u>Simulated Chapter II Transportation Revenues, International Division, 1960</u>	\$118.2
Actual (Exhibit F, Sheet 1) plus Chapter II Calculation (Exhibit F, Sheet 2)	
$\$98.4 + \$19.8 = \$118.2$	

The pages that follow set forth details of our calculations of operating expense changes with earlier receipt of B-131 and B-331 aircraft, for the Domestic and International Divisions, for 1959 and 1960.

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1959

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(Millions)	

FLYING OPERATIONS EXPENSE

For B-131 Jet Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses

\$ 8.7 \$+1.3

This expense was incurred for operating B-131 aircraft 12.4 million plane-miles (page 43). We estimate the additional 1.9 million B-131 plane-miles mentioned on page 43 would have increased this Group A expense proportionately. The calculation is:

$$\$8.7 \times \frac{1.9}{12.4} = \$1.3 \text{ million increase}$$

- B. Purchased public liability and property damage insurance

\$ 1.8 \$+0.3

This expense is primarily for aircraft hull insurance for 8.9 B-131 aircraft available for commercial service (page 41). We estimate the 1.4 increase in the available number of aircraft mentioned on page 41 would have increased this expense proportionately. The calculation is:

$$\$1.8 \times \frac{1.4}{8.9} = \$0.3 \text{ million increase}$$

Total B-131 Flying Operations Expense

\$ 10.5 \$+1.6

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$+0.7

In 1960 TWA operated 3.8 million B-331 plane-miles and incurred therefor \$3.2 million Group A expense (Exhibit F, Sheet 13). We believe the estimated 0.8 million additional B-331 plane-miles mentioned on page 43 would have caused TWA to incur a proportionate amount of expense, calculated as follows:

$$\$3.2 \times \frac{0.8}{3.8} = \$0.7 \text{ million increase}$$

Note: There was no B-331 Domestic Division service in 1959, so 1960 statistics are used for this calculation.

This symbol is used to designate an amount too small to be significant in these calculations which are rounded to the nearest \$0.1 million.

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1959

Actual Expense With Revisions of Quarters I and II	Estimated Change In Expense, For Quarters III
(M i l l i o n s)	

B. Purchased public liability and property damage insurance	#	\$+0.1
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In 1960 TWA had 2.7 B-331 aircraft available for commercial service and incurred \$0.3 million expense for this insurance (Exhibit F, Sheet 13). We estimate the 0.6 increase in B-331 aircraft available (page 42) would have been accompanied by a proportionate increase in this expense. The calculation is:

$$\$0.3 \times \frac{0.6}{2.7} = \$0.1 \text{ million increase}$$

Note: There was no B-331 Domestic Division service in 1959, so 1960 statistics were used for this calculation.

Total B-331 Flying Operations Expense	#	\$+0.8
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For L-1649A Piston Aircraft

A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses	\$ 6.4	\$-2.0
--	--------	--------

This expense was incurred for operating L-1649A aircraft 8.6 million plane-miles (Exhibit G, Sheet 1). We estimate the reduction of 2.7 million L-1649A plane-miles mentioned on page 44 would have decreased this Group A expense proportionately. The calculation is:

$$\$6.4 \times \frac{2.7}{8.6} = \$2.0 \text{ million decrease}$$

B. Purchased public liability and property damage insurance	\$ 0.3	NC
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Total L-1649A Flying Operations Expense	\$ 6.7	\$-2.0
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For Other Aircraft and Generally Nonrevenue	\$ 54.1	NC
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Total Flying Operations Expense	\$ 71.3	\$+0.4
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NC - No significant change estimated for these expenses.

CALCULATION DETAILS FOR CHAPTER IIIDOMESTIC DIVISION, 1959

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(M i l l i o n s)	

MAINTENANCE EXPENSEDirect Maintenance Expense

For B-131 Jet Aircraft Flight Equipment

\$ 6.0

\$+0.9

This expense was incurred for operating B-131 aircraft 12.4 million plane-miles (page 43). We estimate the additional 1.9 million B-131 plane-miles mentioned on page 43 would have increased this expense proportionately. The calculation is:

$$\$6.0 \times \frac{1.9}{12.4} = \$0.9 \text{ million increase}$$

For B-331 Jet Aircraft Flight Equipment

#

\$+0.3

In 1960 TWA operated 3.8 million B-331 plane-miles and incurred therefor \$1.3 million expense (Exhibit F, Sheet 14). We believe the estimated 0.8 million additional B-331 plane-miles mentioned on page 43 would have caused TWA to incur a proportionate amount of expense, calculated as follows:

$$\$1.3 \times \frac{0.8}{3.8} = \$0.3 \text{ million increase}$$

Note: There was no B-331 Domestic Division service in 1959, so 1960 statistics were used for this calculation.

For L-1649A Piston Aircraft Flight Equipment

\$ 3.3

\$-1.0

This expense was incurred for operating L-1649A aircraft 8.6 million plane-miles (Exhibit G, Sheet 1). We estimate the reduction of 2.7 million L-1649A plane-miles mentioned on page 44 would have decreased this expense proportionately. The calculation is:

$$\$3.3 \times \frac{2.7}{8.6} = \$1.0 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue

\$ 22.4

NC

For General Ground Property and Equipment

\$ 0.6

NC

Total Direct Maintenance Expense\$ 32.3\$+0.2

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1959

	Actual Expense With Revisions of Chapters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter III <u>(Millions)</u>
<u>Applied Maintenance Burden Expense</u>		
For B-131 Jet Aircraft Flight Equipment	\$ 1.8	\$+0.3
<p>This \$1.8 million B-131 Applied Maintenance Burden expense was incurred in connection with \$6.0 million B-131 Direct Maintenance expense shown on the previous page. We estimate the \$0.9 million increase for B-131 Direct Maintenance (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$1.8 \times \frac{\$0.9}{\$6.0} = \$0.3 \text{ million increase}$		
For B-331 Jet Aircraft Flight Equipment	#	\$+0.1
<p>In 1960 TWA incurred \$0.5 million B-331 Applied Maintenance Burden expense in connection with \$1.3 million Direct Maintenance expense (Exhibit F, Sheet 15). We estimate the \$0.3 million increase in Direct Maintenance expense (shown above) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$0.5 \times \frac{\$0.3}{\$1.3} = \$0.1 \text{ million increase}$		
<p><u>Note:</u> There was no B-331 Domestic Division service in 1959, so 1960 statistics were used for this calculation.</p>		
For L-1649A Piston Aircraft Flight Equipment	\$ 2.0	\$-0.6
<p>This \$2.0 million L-1649A Applied Maintenance Burden expense was incurred in connection with \$3.3 million L-1649A Direct Maintenance shown in Exhibit G, Sheet 5. We estimate the \$1.0 million decrease for L-1649A Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$2.0 \times \frac{\$1.0}{\$3.3} = \$0.6 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$ 14.6	NC
For General Ground Property and Equipment	\$ 0.5	NC
Total Applied Maintenance Burden Expense	<u>\$ 18.9</u>	<u>\$-0.2</u>
Total Maintenance Expense	<u>\$ 51.2</u>	<u>NC</u>

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(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1959

Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III <u> </u>
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AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$ 17.0

\$+0.1

This expense was incurred in connection with operating 96.0 million plane-miles (Exhibit G, Sheet 1) which remain unchanged (44). However, we select a \$0.1 million increase for additional landing fees, as a possible increase in Aircraft Servicing expense.

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses

\$ 3.4

NC

Total Aircraft Servicing Expense

\$ 20.4

\$+0.1

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll

\$ 8.0

NC

This expense was incurred in connection with operating 94.2 million plane-miles (Exhibit G, Sheet 1) which remain unchanged.

- B. Passenger food, other supplies, insurance-traffic liability and other services-outside

\$ 10.7

\$+0.3

This expense was incurred in connection with passenger traffic revenue of \$252.7 million (Exhibit G, Sheet 1). We estimate the \$6.7 million increase in revenue from passenger traffic mentioned on page 45 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$10.7 \times \frac{\$6.7}{\$252.7} = \$0.3 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit G, page 8 of 35
(Exhibits B-J to C. & C. Report-
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CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1959

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III <u>(M i l l i o n s)</u>
C. Trainees and instructors, interrupted trips expense, other expenses and various miscellaneous expenses	\$ 0.5	NC
Total Passenger Service Expense	\$ 19.2	\$+0.3

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies, insurance-employee welfare, taxes-payroll and injuries, loss and damage

\$ 13.5 \$+0.3

This expense was incurred in connection with \$272.4 million transportation revenues (Exhibit G, Sheet 1). We estimate the \$7.0 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$13.5 \times \frac{\$ 7.0}{\$272.4} = \$0.3 \text{ million increase}$$

- B. Other personnel, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, other expenses and various miscellaneous expenses

\$ 1.3 NC
\$ 14.8 \$+0.3

Total Traffic Servicing Expense

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense

\$ 1.4 NC

This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$20.4 and \$14.8 million respectively (previous page and above). We estimate the increase in Aircraft and Traffic Servicing expenses of \$0.1 and \$0.3 million respectively (previous page and above) would have been accompanied by a proportionate increase in Servicing Administration expense. The calculation is:

$$\$1.4 \times \frac{(\$ 0.1 + \$ 0.3)}{(\$20.4 + \$14.8)} = \$0.016 \text{ million increase}$$

Total Servicing Administration Expense

\$ 1.4 NC

CALCULATION DETAILS FOR CHAPTER IIIDOMESTIC DIVISION, 1959

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(M i l l i o n s)	

PROMOTION AND SALES EXPENSEReservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, tariffs, schedules and timetables, rentals, other expenses, insurance-employee welfare and taxes-payroll

\$ 21.0

\$+0.5

This expense was incurred in connection with \$272.4 million transportation revenues (Exhibit G, Sheet 1). We estimate the \$7.0 million increase in simulated transportation revenues (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$21.0 \times \frac{\$7.0}{\$272.4} = \$0.5 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies, memberships and various miscellaneous expenses

\$ 1.8

NC

Total Reservations and Sales Expense

\$ 22.8

\$+0.5

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables

\$ 4.8

\$+0.1

This expense was incurred in connection with \$272.4 million transportation revenues (Exhibit G, Sheet 1). We estimate the \$7.0 million increase in simulated transportation revenues (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.8 \times \frac{\$7.0}{\$272.4} = \$0.1 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit G, page 10 of 35
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1959

	Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
	<u>(M i l l i o n s)</u>	
B. Other promotional and publicity expenses, professional and technical fees and expenses, personnel expenses, rentals and various miscellaneous expenses	\$ 0.7	NC
Total Advertising and Publicity Expense	\$ 5.5	\$+0.1
Total Promotion and Sales Expense	\$ 28.3	\$+0.6

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, rentals, stationery, printing and office supplies, uncollectible accounts, other expenses, insurance-employee welfare and taxes-payroll

\$ 6.1 \$+0.2

This expense was incurred in connection with \$272.4 million transportation revenues (Exhibit G, Sheet 1). We estimate the \$7.0 million increase in simulated transportation revenues (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$6.1 \times \frac{\$7.0}{\$272.4} = \$0.2 \text{ million increase}$$

- B. General management personnel, communications purchased, professional and technical fees and expenses, memberships, corporate and fiscal expenses, taxes-other than payroll, purchased public liability and property damage insurance, legal fees and expenses, other services-outside, other supplies and various miscellaneous expenses

\$ 2.4 NC
 \$ 8.5 \$+0.2

Total General and Administrative Expenses

TWA Ex. 4(c)(4), Exhibit G, page 11 of 35
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 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1959

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III <u> </u>
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$ 23.9	\$+1.2
For ground property and equipment	\$ 3.1	NC
For amortization of developmental and pre- operating expense	\$ 1.6	NC
Total Depreciation and Amortization Expense	<u>\$ 28.6</u>	<u>\$+1.2</u>
 <u>TOTAL OPERATING EXPENSE</u>	 <u>\$243.7</u>	 <u>\$+3.1</u>

Note: These figures were given to us by Price Waterhouse & Co.

TWA Ex. 4(c)(4), Exhibit G, page 12 of 35
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1959

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(Millions)	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, aircraft fuels and various miscellaneous expenses (Exhibit F, Sheet 3: \$0.2 + \$0.1 = \$0.3)

\$ 0.3

\$+1.3

In 1959 there were only 0.2 million B-331 plane-miles on International Division service and we estimated increase of only 0.1 million for Chapter II. For Chapter III conditions, we estimate a much larger increase of 1.6 million B-331 plane-miles (page 46). We believe it is reasonable to use 1960 operating expenses as the basis for 1959 calculations of B-331 Flying Operations and Maintenance expenses for Chapter III because we believe 1960 expenses are more nearly comparable to those that would have been incurred in 1959 with the substantial increase in B-331 plane-miles. The calculation is:

\$8.9 million Group A actual expense, B-331, 1960
 (Exhibit F, Sheet 6)

10.7 million B-331 actual plane-miles, 1960
 (Exhibit F, Sheet 6)

$$\$8.9 \times \frac{1.6}{10.7} = \$1.3 \text{ million increase}$$

- B. Purchased public liability and property damage insurance

#

\$+0.1

This expense is primarily for aircraft hull insurance. Using 1960 data for B-331 actual operations, with our estimate of 0.9 increase in the number of available aircraft for 1959 mentioned on page 42, we calculate a proportionate increase as follows:

\$0.9 million Group B actual expense, B-331, 1960
 (Exhibit F, Sheet 6)

6.1 million B-331 aircraft available for commercial service, 1960 (Exhibit F, Sheet 6)

$$\$0.9 \times \frac{0.9}{6.1} = \$0.1 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 0.3

\$+1.4

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1959

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(Millions)	

For L-1649A Piston Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses (Exhibit F, Sheet 3: \$17.4 - \$0.1 = \$17.3)

\$ 17.3

\$-1.6

This expense was incurred for operating L-1649A aircraft 16.9 million plane-miles (Exhibit G, Sheet 1). We estimate the reduction of 1.6 million L-1649A plane-miles mentioned on page 46 would have decreased this Group A expense proportionately. The calculation is:

$$\$17.3 \times \frac{1.6}{16.9} = \$1.6 \text{ million decrease}$$

- B. Purchased public liability and property damage insurance (Exhibit F, Sheet 3)

\$ 0.7

NC

Total L-1649A Flying Operations Expense

\$ 18.0

\$-1.6

- For Other Aircraft and Generally Nonrevenue (Exhibit F, Sheet 3)

\$ 10.1

NC

Total Flying Operations Expense

\$ 28.4

\$-0.2

MAINTENANCE EXPENSE

Direct Maintenance Expense

- For B-331 Jet Aircraft Flight Equipment

(Exhibit F, Sheet 4: \$0.2 + \$0.1 = \$0.3)

\$ 0.3

\$+0.6

In 1960, TWA operated 10.7 million B-331 plane-miles and incurred therefor \$3.9 million Direct Maintenance expense (Exhibit F, Sheet 7). We believe the estimate of 1.6 million additional B-331 plane-miles mentioned on page 46 would have caused TWA to incur a proportionate increase in expenses. The calculation is:

$$\$3.9 \times \frac{1.6}{10.7} = \$0.6 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit G, page 14 of 35
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CALCULATION DETAILS FOR CHAPTER IIIINTERNATIONAL DIVISION, 1959

	Actual Expense With Revisions of Chapter I and II (Millions)	Estimated Change In Expense, For Chapter III
For L-1649A Piston Aircraft Flight Equipment (Exhibit F, Sheet 4)	\$ 5.9	\$-0.6
<p>This expense was incurred for operating L-1649A aircraft 17.0 million plane-miles (Exhibit F, Sheet 1). We estimate the reduction of 1.6 million L-1649A plane-miles mentioned on page 46 would have decreased this expense proportionately. The calculation is:</p> $\$5.9 \times \frac{1.6}{17.0} = \$0.6 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue (Exhibit F, Sheet 4)	\$ 2.5	NC
For General Ground Property and Equipment (Exhibit F, Sheet 4)	\$ 0.2	NC
Total Direct Maintenance Expense	\$ 8.9	NC
<u>Applied Maintenance Burden Expense</u>		
For B-331 Jet Aircraft Flight Equipment (Exhibit F, Sheet 4: $\$0.1 + \$0.1 = \$0.2$)	\$ 0.2	\$+0.2
<p>In 1960, TWA incurred \$1.5 million Applied Maintenance Burden expense in connection with \$3.9 million B-331 Direct Maintenance expense (Exhibit F, Sheet 8). We estimate the \$0.6 million increase for B-331 Direct Maintenance expense (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$1.5 \times \frac{\$0.6}{\$3.9} = \$0.2 \text{ million increase}$		
For L-1649A Piston Aircraft Flight Equipment (Exhibit F, Sheet 4)	\$ 3.4	\$-0.3
<p>This \$3.4 million L-1649A Applied Maintenance Burden expense was incurred in connection with the \$5.9 million L-1649A Direct Maintenance expense shown above. We estimate the \$0.6 million decrease for L-1649A Direct Maintenance expense (above) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$3.4 \times \frac{\$0.6}{\$5.9} = \$0.3 \text{ million decrease}$		

TWA Ex. 4(c)(4), Exhibit G, page 15 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1959

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III <u>(M i l l i o n s)</u>
For Other Aircraft and Generally Nonrevenue (Exhibit F, Sheet 4)	\$ 1.3	NC
For General Ground Property and Equipment (Exhibit F, Sheet 4)	\$ 0.1	NC
Total Applied Maintenance Burden Expense	<u>\$ 5.0</u>	<u>\$-0.1</u>
Total Maintenance Expense	<u>\$ 13.9</u>	<u>\$-0.1</u>

AIRCRAFT SERVICING EXPENSE

- A. Aircraft control personnel, trainees and instructors, rentals, landing fees, shop and servicing supplies, insurance-employee welfare and taxes-payroll

\$ 3.7 NC

This expense was incurred in connection with operating 23.6 million plane-miles which remains unchanged (Exhibit F, Sheet 1). Therefore, we estimate no significant change in the above expense.

- B. General aircraft and traffic handling personnel, communications personnel, personnel expenses, communications purchased, other services-outside, other supplies, other expenses and various miscellaneous expenses

\$ 3.5 NC

Total Aircraft Servicing Expense

\$ 7.2 NC

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll

\$ 3.0 NC

This expense was incurred in connection with operating 21.8 million plane-miles (46) which remains unchanged. Therefore, we estimate no significant change in this expense.

TWA Ex. 4(c)(4), Exhibit G, page 16 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1959

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
<u>(M i l l i o n s)</u>	

- B. Passenger food expense, other supplies,
insurance-traffic liability and other
services-outside

\$ 2.2	\$+0.2
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This expense was incurred in connection with \$60.1 million passenger revenue (page 47; \$59.5 + \$0.6 = \$60.1). We estimate the \$4.2 million increase in passenger revenue mentioned on page 47 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$2.2 \times \frac{\$4.2}{\$60.1} = \$0.2 \text{ million increase}$$

- C. Interrupted trips expense, other ex-
penses and various miscellaneous expenses

\$ 0.2	NC
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Total Passenger Service Expense

\$ 5.4	\$+0.2
--------	--------

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling
personnel, passenger handling person-
nel, cargo handling personnel, other
services-outside, rentals, other sup-
plies, insurance-employee welfare and
taxes-payroll

\$ 2.3	\$+0.1
--------	--------

This expense was incurred in connection with \$74.2 million transportation revenue (Exhibit F, Sheet 1 and page 33; \$73.6 + \$0.6 = \$74.2). We estimate the \$4.4 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$2.3 \times \frac{\$4.4}{\$74.2} = \$0.1 \text{ million increase}$$

- B. Other personnel, communications pur-
chased, clearance, customs and duties,
other expenses and various miscellaneous
expenses

\$ 0.8	NC
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Total Traffic Servicing Expense

\$ 3.1	\$+0.1
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TWA Ex. 4(c)(4), Exhibit G, page 17 of 35
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CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1959

Actual Expense With Revisions of Chapters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter III
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SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense

\$ 0.8

NC

This expense was incurred in connection with Aircraft Servicing and Traffic Servicing expense of \$7.2 million and \$3.1 million respectively (previous page). We estimate the increase of \$0.1 million in these expenses (previous page) would not have resulted in any significant increase in Servicing Administration expenses.

Total Servicing Administration Expense

\$ 0.8

NC

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, other expenses, insurance-employee welfare and taxes-payroll

\$ 7.7

\$+0.5

This expense was estimated in connection with \$74.2 million transportation revenue (shown previously). We estimate the \$4.4 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$7.7 \times \frac{\$4.4}{\$74.2} = \$0.5 \text{ million increase}$$

- B. General management personnel, light, heat and power, other services-outside, stationery, printing and office supplies, other supplies and various miscellaneous expenses

\$ 0.6

NC

Total Reservations and Sales Expense

\$ 8.3

\$+0.5

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1959

Actual Expense With Revisions of Chapters I and II <hr style="width: 100%; border: 0.5px solid black; margin: 0;"/> (M i l l i o n s)	Estimated Change In Expense, For Chapter III
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Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables

\$ 2.9	\$+0.2
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This expense was incurred in connection with \$74.2 million transportation revenue (shown previously). We estimate the \$4.4 million in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$2.9 \times \frac{\$4.4}{\$74.2} = \$0.2 \text{ million increase}$$

- B. Other promotion and publicity expenses, professional and technical fees and expenses and various miscellaneous expenses

\$ 0.2	NC
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Total Advertising and Publicity Expense

\$ 3.1	\$+0.2
--------	--------

Total Promotion and Sales Expense

\$ 11.4	\$+0.7
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GENERAL AND ADMINISTRATIVE EXPENSE

- A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll

\$ 2.4	\$+0.1
--------	--------

This expense was incurred in connection with \$74.2 million transportation revenue (shown previously). We estimate the \$4.4 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$2.4 \times \frac{\$4.4}{\$74.2} = \$0.1 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit G, page 19 of 35
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CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1959

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III <u>(M i l l i o n s)</u>
B. General management personnel, communications purchased, taxes-other than payroll, insurance purchased-general, other expenses, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses	\$ 0.7	NC
Total General and Administrative Expense	<u>\$ 3.1</u>	<u>\$+0.1</u>
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$ 8.3	\$+0.7
For ground property and equipment	\$ 0.8	\$+0.1
For amortization of developmental and pre-operating expense	\$ 0.7	NC
Total Depreciation and Amortization Expense	<u>\$ 9.8</u>	<u>\$+0.8</u>

Note: These figures were given to us by Price Waterhouse & Co.

<u>TOTAL OPERATING EXPENSE</u>	\$ 83.1	\$+1.6
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CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(M i l l i o n s)	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses (Exhibit F, Sheet 13: $\$3.2 + \$1.7 = \$4.9$)

\$ 4.9 \$+0.8

This expense was calculated for operating B-331 aircraft 5.8 million plane-miles (Exhibit G, Sheet 2). We estimate the additional 1.0 million B-331 plane-miles mentioned on page 44 would have increased this Group A expense proportionately. The calculation is:

$$\$4.9 \times \frac{1.0}{5.8} = \$0.8 \text{ million increase}$$

- B. Purchased public liability and property damage insurance (Exhibit F, Sheet 13: $\$0.3 + \$0.2 = \$0.5$)

\$ 0.5 \$+0.1

This expense is primarily for aircraft hull insurance for 4.1 B-331 aircraft available for commercial service (page 42). We estimate the 0.7 increase in the available number of aircraft mentioned on page 42 would have increased this insurance expense proportionately. The calculation is:

$$\$0.5 \times \frac{0.7}{4.1} = \$0.1 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 5.4 \$+0.9

For L-1649A Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses (Exhibit F, Sheet 13: $\$6.7 - \$2.5 = \$4.2$)

\$ 4.2 \$-1.2

This expense was calculated for operating L-1649A aircraft 4.9 million plane-miles (Exhibit G, Sheet 2). We estimate the reduction of 1.4 million L-1649A plane-miles mentioned on page 44 would have decreased this Group A expense proportionately. The calculation is:

TWA Ex. 4(c)(4), Exhibit G, page 21 of 35
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CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III <u>(M i l l i o n s)</u>
B. Purchased public liability and property damage insurance (Exhibit F, Sheet 14)	\$ 0.2	NC
Total L-1649A Flying Operations Expense	\$ 4.4	\$-1.2
For Other Aircraft and Generally Nonrevenue (Exhibit F, Sheet 14)	\$ 63.6	NC
Total Flying Operations Expense	\$ 73.4	\$-0.3

MAINTENANCE EXPENSE

Direct Maintenance Expense

For B-331 Jet Aircraft Flight Equipment (Exhibit F, Sheet 14: $\$1.3 + \$0.7 = \$2.0$)	\$ 2.0	\$+0.3
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This expense was calculated for operating B-331 aircraft 5.8 million plane-miles (Exhibit G, Sheet 2). We estimate the additional 1.0 million B-331 plane-miles mentioned on page 44 would have increased this expense proportionately. The calculation is:

$$\$2.0 \times \frac{1.0}{5.8} = \$0.3 \text{ million increase}$$

For L-1649A Piston Aircraft Flight Equipment (Exhibit F, Sheet 14: $\$3.7 - \$1.4 = \$2.3$)	\$ 2.3	\$-0.7
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This expense was calculated for operating L-1649A aircraft 4.9 million plane-miles (Exhibit G, Sheet 2). We estimate the reduction of 1.4 million L-1649A plane-miles mentioned on page 44 would have decreased this expense proportionately. The calculation is:

$$\$2.3 \times \frac{1.4}{4.9} = \$0.7 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue (Exhibit F, Sheet 14)	\$ 30.1	NC
For General Ground Property and Equipment. (Exhibit F, Sheet 14)	\$ 0.8	NC
Total Direct Maintenance Expense	\$ 35.2	\$-0.4

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CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III
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Applied Maintenance Burden Expense

For B-331 Jet Aircraft Flight Equipment

(Exhibit F, Sheet 15: $\$0.5 + \$0.3 = \$0.8$)

\$.08

\$+0.1

This \$0.8 million B-331 Applied Maintenance Burden expense was estimated in connection with \$2.0 million B-331 Direct Maintenance expense shown on the previous page. We estimate the \$0.3 million increase for B-331 Direct Maintenance expense (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:

$$\$0.8 \times \frac{\$0.3}{\$2.0} = \$0.1 \text{ million increase}$$

For L-1649A Piston Aircraft Flight Equipment

(Exhibit F, Sheet 15: $\$2.5 - \$0.9 = \$1.6$)

\$ 1.6

\$-0.5

This \$1.6 million L-1649A Applied Maintenance Burden expense was estimated in connection with \$2.3 million L-1649A Direct Maintenance expense shown on the previous page. We estimate the \$0.7 million decrease for L-1649A Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:

$$\$1.6 \times \frac{\$0.7}{\$2.3} = \$0.5 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue
(Exhibit F, Sheet 15)

\$ 20.6

NC

For General Ground Property and Equipment
(Exhibit F, Sheet 15)

\$ 0.8

NC

Total Applied Maintenance Burden Expense

\$ 23.8

\$-0.4

Total Maintenance Expense

\$ 59.0

\$-0.8

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters <u>I and II</u>	Estimated Change In Expense, For <u>Chapter III</u>
<u>(Millions)</u>	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors; personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 16:

\$18.5 - \$0.2 = \$18.3)

\$ 18.3

\$-0.1

This expense was estimated in connection with operating 90.1 million plane-miles (Exhibit G, Sheet 2). We estimate the net reduction of 0.4 million plane-miles (Exhibit G, Sheet 1) would have been accompanied by a proportionate decrease in this Group A expense. The calculation is:

$$\$18.3 \times \frac{0.4}{90.1} = \$0.1 \text{ million decrease}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses

\$ 2.9

NC

Total Aircraft Servicing Expense

\$ 21.2

\$-0.1

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 16: \$8.7 - \$0.1 = \$8.6)

\$ 8.6

NC

This expense was estimated in connection with operating 87.0 million plane-miles (Exhibit G, Sheet 2). We estimate the net reduction of 0.4 million plane-miles (Exhibit G, Sheet 1) would have been accompanied by a proportionate decrease in this Group A expense. The calculation is:

$$\$8.6 \times \frac{0.4}{87.0} = \$0.04 \text{ million decrease}$$

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(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter III
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside (Exhibit F, Sheet 17: \$12.9 + \$0.1 = \$13.0)	\$ 13.0	\$+0.1
<p>This expense was estimated in connection with passenger traffic revenue of \$255.2 million (Exhibit G, Sheet 2). We estimate the \$1.1 million increase in revenue from passenger traffic mentioned on page 48 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:</p> $\$13.0 \times \frac{\$ 1.1}{\$255.2} = \$0.1 \text{ million increase}$		
C. Trainees and instructors, interrupted trips expense, other expenses and various miscellaneous expenses (Exhibit F, Sheet 17)	\$ 0.6	NC
Total Passenger Service Expense	<u>\$ 22.2</u>	<u>\$+0.1</u>

TRAFFIC SERVICING EXPENSE

A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies, insurance-employee welfare, taxes-payroll and injuries, loss and damage (Exhibit F, Sheet 17: \$15.4 + \$0.1 = \$15.5)	\$ 15.5	\$+0.1
<p>This expense was estimated in connection with \$277.5 million transportation revenue (Exhibit G, Sheet 2). We estimate the \$1.2 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$15.5 \times \frac{\$ 1.2}{\$277.5} = \$0.1 \text{ million increase}$		
B. Other personnel, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, other expenses and various miscellaneous expenses (Exhibit F, Sheet 17)	\$ 1.5	NC
Total Traffic Servicing Expense	<u>\$ 17.0</u>	<u>\$+0.1</u>

CALCULATION DETAILS FOR CHAPTER IIIDOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
<u>(Millions)</u>	

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense
 (Exhibit F, Sheet 18)

\$ 1.9

NC

This expense was estimated in connection with Aircraft Servicing and Traffic Servicing expense of \$21.2 and \$17.0 million respectively (shown previously). Our above-estimated changes in Aircraft Servicing and Traffic Servicing expenses of \$-0.1 million and \$+0.1 million respectively add to no change in the total, and we therefore estimate no change in Servicing Administration expense.

Total Servicing Administration Expense

\$ 1.9

NC

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, tariffs, schedules and timetables, rentals, other expenses, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 18: \$21.8 + \$0.2 = \$22.0)

\$ 22.0

\$+0.1

This expense was estimated in connection with \$277.5 million transportation revenue (Exhibit G, Sheet 2). We estimate the \$1.2 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$22.0 \times \frac{\$1.2}{\$277.5} = \$0.1 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies, memberships and various miscellaneous expenses (Exhibit F, Sheet 18)

\$ 2.2

NC

Total Reservations and Sales Expense

\$ 24.2

\$+0.1

TWA Ex. 4(c)(4), Exhibit G, page 26 of 35
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
<u>(Millions)</u>	

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables (Exhibit F, Sheet 19)

\$ 4.7

NC

This expense was estimated in connection with \$277.5 million transportation revenue (Exhibit G, Sheet 2). We estimate the \$1.2 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.7 \times \frac{\$1.2}{\$277.5} = \$0.02 \text{ million increase}$$

- B. Other promotional and publicity expenses, professional and technical fees and expenses, personnel expenses, rentals and various miscellaneous expenses

\$ 0.7

NC

Total Advertising and Publicity Expense

\$ 5.4

NC

Total Promotion and Sales Expense

\$ 29.6

\$+0.1

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll (Exhibit F, Sheets 19 and 20)

\$ 6.9

NC

This expense was estimated in connection with \$277.5 million transportation revenue (Exhibit G, Sheet 2). We estimate the \$1.2 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$6.9 \times \frac{\$1.2}{\$277.5} = \$0.03 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit G, page 27 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
	<u>(M i l l i o n s)</u>	
B. General management personnel, communications purchased, professional and technical fees and expenses, memberships, corporate and fiscal expenses, taxes-other than payroll, purchased public liability and property damage insurance, legal fees and expenses, other services-outside, other supplies and various miscellaneous expenses	\$ 4.3	NC
Total General and Administrative Expense (Exhibit F, Sheet 20)	<u>\$ 11.2</u>	<u>NC</u>
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$ 28.9	\$+0.6
For ground property and equipment	\$ 3.8	\$+0.1
For amortization of developmental and pre-operating expense	\$ 2.8	\$+0.1
Total Depreciation and Amortization Expense	<u>\$ 35.5</u>	<u>\$+0.8</u>
 <u>Note: These figures were given to us by Price Waterhouse & Co.</u>		
<u>TOTAL OPERATING EXPENSE</u>	<u>\$271.0</u>	<u>\$-0.1</u>

TWA Ex. 4(c)(4), Exhibit G, page 28 of 35
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1960

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(Millions)	

FLYING OPERATIONS EXPENSE

For B-331 Jet Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses (Exhibit F, Sheet 6: \$8.9 + \$5.2 = \$14.1)

\$ 14.1

\$+0.9

This expense was estimated for operating B-331 aircraft 17.0 million plane-miles (Exhibit G, Sheet 2). We estimate the additional 1.1 million B-331 plane-miles mentioned on page 46 would have increased this Group A expense proportionately. The calculation is:

$$\$14.1 \times \frac{1.1}{17.0} = \$0.9 \text{ million increase}$$

- B. Purchased public liability and property damage insurance (Exhibit F, Sheet 6: \$0.9 + \$0.5 = \$1.4)

\$ 1.4

\$+0.1

This expense is primarily for aircraft hull insurance for 9.7 B-331 aircraft available for commercial service (page 42). We estimate the 0.6 increase in the number of available aircraft mentioned on page 42 would have increased this insurance expense proportionately. The calculation is:

$$\$1.4 \times \frac{0.6}{9.7} = \$0.1 \text{ million increase}$$

Total B-331 Flying Operations Expense

\$ 15.5

\$+1.0

For L-1649A Piston Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses (Exhibit F, Sheet 6: \$8.0 - \$6.0 = \$2.0)

\$ 2.0

NC

This expense was estimated for operating L-1649A aircraft 1.7 million plane-miles (Exhibit G, Sheet 2). We estimate there would have been no further reduction in L-1649A plane-miles (page 46) and therefore, no change in this Group A expense.

CALCULATION DETAILS FOR CHAPTER IIIINTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter III
B. Purchased public liability and property damage insurance (Exhibit F, Sheet 7)	\$ 0.2	NC
Total L-1649A Flying Operations Expense	\$ 2.2	NC
For Other Aircraft and Generally Nonrevenue (Exhibit F, Sheet 7)	\$ 3.6	NC
Total Flying Operations Expense	\$ 21.3	\$+1.0

MAINTENANCE EXPENSEDirect Maintenance Expense

For B-331 Jet Aircraft Flight Equipment

(Exhibit F, Sheet 7: \$3.9 + \$2.3 = \$6.2)

\$ 6.2

\$+0.4

This expense was estimated for operating B-331 aircraft 17.0 million plane-miles (Exhibit G, Sheet 2). We estimate the additional 1.1 million B-331 plane-miles mentioned on page 46 would have increased this expense proportionately. The calculation is:

$$\$6.2 \times \frac{1.1}{17.0} = \$0.4 \text{ million increase}$$

For L-1649A Piston Aircraft Flight Equipment

(Exhibit F, Sheet 7: \$3.3 - \$2.5 = \$0.8)

\$ 0.8

NC

This expense was estimated for operating L-1649A aircraft 1.7 million plane-miles (Exhibit G, Sheet 2). We estimate there would have been no further reduction in L-1649A plane-miles (page 46) and, therefore, no change in this expense.

For Other Aircraft and Generally Nonrevenue

(Exhibit F, Sheet 7)

\$ 0.6

NC

For General Ground Property and Equipment

(Exhibit F, Sheet 7)

\$ 0.2

NC

Total Direct Maintenance Expense

\$ 7.8

\$+0.4

AX-275

TWA Ex. 4(c)(4), Exhibit G, page 30 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
	(M i l l i o n s)	
<u>Applied Maintenance Burden Expense</u>		
For B-331 Jet Aircraft Flight Equipment (Exhibit F, Sheet 8: $\$1.5 + \$0.9 = \$2.4$)	\$ 2.4	\$+0.2
<p>This \$2.4 million B-331 Applied Maintenance Burden expense was estimated in connection with \$6.2 million B-331 Direct Maintenance expense shown on the previous page. We estimate the \$0.4 million increase for B-331 Direct Maintenance expense (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$2.4 \times \frac{\$0.4}{\$6.2} = \$0.2 \text{ million increase}$		
For L-1649A Piston Aircraft Flight Equipment (Exhibit F, Sheet 8: $\$2.2 - \$1.7 = \$0.5$)	\$ 0.5	NC
<p>This \$0.5 million L-1649A Applied Maintenance Burden expense was estimated in connection with \$0.8 million L-1649A Direct Maintenance expense shown on the previous page. We estimate there would have been no change in this \$0.8 million L-1649A Direct Maintenance expense and, therefore, no change in this Applied Maintenance Burden expense.</p>		
For Other Aircraft and Generally Nonrevenue (Exhibit F, Sheet 8)	\$ 0.6	NC
For General Ground Property and Equipment (Exhibit F, Sheet 8)	\$ 0.1	NC
Total Applied Maintenance Burden Expense	\$ 3.6	\$+0.2
Total Maintenance Expense	\$ 11.4	\$+0.6

TWA Ex. 4(c)(4), Exhibit G, page 31 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1960

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
(M i l l i o n s)	

AIRCRAFT SERVICING EXPENSE

- A. Aircraft control personnel, trainees and instructors, rentals, landing fees, shop and servicing supplies, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 9: $\$3.5 + \$0.2 = \$3.7$)
- | | | |
|--|--------|--------|
| | \$ 3.7 | \$+0.2 |
|--|--------|--------|

This expense was estimated in connection with operating 20.4 million plane-miles (Exhibit G, Sheet 2). We estimate the 1.1 million plane-miles increase mentioned on page 46 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$3.7 \times \frac{1.1}{20.4} = \$0.2 \text{ million increase}$$

- B. General aircraft and traffic handling personnel, communications personnel, record keeping and statistical personnel, personnel expenses, communications purchased, other services-outside, other supplies and various miscellaneous expenses (Exhibit F, Sheet 9)

	\$ 3.5	NC
	\$ 7.2	\$+0.2

Total Aircraft Servicing Expense

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses and taxes-payroll (Exhibit F, Sheet 9: $\$2.7 + \$0.2 = \$2.9$)

	\$ 2.9	\$+0.2
--	--------	--------

This expense was estimated in connection with operating 18.9 million plane-miles (Exhibit G, Sheet 2). We estimate the 1.1 million plane-miles increase mentioned on page 46 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$2.9 \times \frac{1.1}{18.9} = \$0.2 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit G, page 32 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1960

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter III
<u>(M i l l i o n s)</u>	

- B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside (Exhibit F, Sheet 9: \$2.8 + \$0.6 = \$3.4)

\$ 3.4 \$+0.2

This expense was estimated in connection with passenger traffic producing \$100.9 million revenue (page 48). We estimate the \$6.1 million increase in revenue from passengers mentioned on page 48 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$3.4 \times \frac{\$ 6.1}{\$100.9} = \$0.2 \text{ million increase}$$

- C. Interrupted trips expense and various miscellaneous expenses (Exhibit F, Sheet 10)

\$ 0.2 NC

Total Passenger Service Expense

\$ 6.5 \$+0.4

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies and taxes-payroll (Exhibit F, Sheet 10: \$2.4 + \$0.5 = \$2.9)

\$ 2.9 \$+0.2

This expense was estimated in connection with \$118.2 million transportation revenues (Exhibit G, Sheet 2). We estimate the \$6.4 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$2.9 \times \frac{\$ 6.4}{\$118.2} = \$0.2 \text{ million increase}$$

- B. Stationery, printing and office supplies, clearance, customs and duties, other expenses and various miscellaneous expenses (Exhibit F, Sheet 10)

\$ 0.8 NC

Total Traffic Servicing Expense

\$ 3.7 \$+0.2

TWA Ex. 4(c)(4), Exhibit G, page 33 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chatters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter III <u>(Millions)</u>
<u>SERVICING ADMINISTRATION EXPENSE</u>		
Total Servicing Administration Expense (Exhibit F, Sheet 10: \$0.9 + \$0.1 = \$1.0)	\$ 1.0	NC
<p>This expense was estimated in connection with Aircraft Servicing and Traffic Servicing expense of \$7.2 and \$3.7 million respectively (shown previously). We estimate the increase in Aircraft and Traffic Servicing expense of \$0.2 and \$0.2 million respectively (shown previously) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:</p> $\$1.0 \times \frac{(\$0.2 + \$0.2)}{(\$7.2 + \$3.7)} = \$0.04 \text{ million increase}$		
Total Servicing Administration Expense	\$ 1.0	NC
<u>PROMOTION AND SALES EXPENSE</u>		
<u>Reservations and Sales</u>		
A. General aircraft and traffic handling personnel, passenger handling personnel, record keeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, other expenses, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 11: \$11.1 + \$2.2 = \$13.3)	\$ 13.3	\$+0.7
<p>This expense was estimated in connection with \$118.2 million transportation revenue (Exhibit G, Sheet 2). We estimate the \$6.4 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$13.3 \times \frac{\$6.4}{\$118.2} = \$0.7 \text{ million increase}$		
B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies and various miscellaneous expenses (Exhibit F, Sheet 11)	\$ 0.8	NC
Total Reservations and Sales Expense	\$ 14.1	\$+0.7

TWA Ex. 4(c)(4), Exhibit G, page 34 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter III <u>(M i l l i o n s)</u>
Advertising and Publicity		
A. Other personnel, advertising and tariffs, schedules and timetables (Exhibit F, Sheet 11: \$4.0 + \$0.8 = \$4.8)	\$ 4.8	\$+0.3
<p>This expense was estimated in connection with \$118.2 million transportation revenue (Exhibit G, Sheet 2). We estimate the \$6.4 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$4.8 \times \frac{\$ 6.4}{\$118.2} = \$0.3 \text{ million increase}$		
B. Other promotional and publicity expenses, professional and technical fees and expenses and various miscellaneous expenses (Exhibit F, Sheet 11)	\$ 0.6	NC
Total Advertising and Publicity Expense	<u>\$ 5.4</u>	<u>\$+0.3</u>
Total Promotion and Sales Expense	\$ 19.5	\$+1.0

GENERAL AND ADMINISTRATIVE EXPENSE

- | | | |
|---|--------|--------|
| <p>A. Record keeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, rentals, stationery, printing and office supplies, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 12: \$2.6 + \$0.5 = \$3.1)</p> | \$ 3.1 | \$+0.2 |
|---|--------|--------|

This expense was estimated in connection with \$118.2 million transportation revenue (Exhibit G, Sheet 2). We estimate the \$6.4 million increase in simulated transportation revenue (Exhibit G, Sheet 1) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$3.1 \times \frac{\$ 6.4}{\$118.2} = \$0.2 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit G, page 35 of 35
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER III

INTERNATIONAL DIVISION, 1960

	Actual Expense With Revisions of Chapters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter III <u>(Millions)</u>
B. General management personnel, communications purchased, professional and technical fees and expenses, taxes-other than payroll, purchased public liability and property damage insurance, legal fees and expenses and various miscellaneous expenses (Exhibit F, Sheet 12)	\$ 0.9	NC
Total General and Administrative Expense	<u>\$ 4.0</u>	<u>\$+0.2</u>
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
For flight equipment including airframes, engines, spares, other flight equipment and expendable spare parts obsolescence	\$ 11.7	\$+0.6
For ground property and equipment	\$ 0.6	\$+0.1
For amortization of developmental and pre-operating expense	\$ 1.7	\$+0.2
Total Depreciation and Amortization Expense	<u>\$ 14.0</u>	<u>\$+0.9</u>
 <u>TOTAL OPERATING EXPENSE</u>	 <u>\$ 88.6</u>	 <u>\$+4.5</u>

Note: These figures were given to us by Price Waterhouse & Co.

TWA Ex. 4(c)(4), Exhibit H, page 1 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR OPERATING EXPENSE CHANGES, CHAPTER IV

FOR RECEIPT OF CV 880 AIRCRAFT ON CONTRACT DELIVERY DATES

For our calculation of operating expense changes that would have occurred if TWA had received its fleet of twenty CV 880 jet aircraft on the dates provided in the purchase contract for the aircraft as mentioned on page 52, we used operating statistics mentioned in the text of Chapter IV, certain operating statistics and expense estimates from Exhibits F and G, expense data from CAB Form 41 annual reports and the following statistics.

	<u>Millions</u>
<u>Actual Plane-Miles, Domestic Division, 1960</u> L-1049G	14.5
This is a calculated annual summary of figures shown in TWA's Monthly Operating Statistics, Schedule 3-70M.	
<u>Estimated Chapter III Passenger Revenues, Domestic Division, 1960</u> Chapter II Estimate (Exhibit G, Sheet 2) plus Chapter III Estimated Change (pg. 48) $\$255.2 + \$1.1 = \$256.3$	\$256.3
<u>Simulated Chapter III Transportation Revenues, Domestic Division, 1960</u> Chapter II Simulated Transportation Revenues (Exhibit G, Sheet 2) plus Chapter III Additional Simulated Transportation Revenues (Exhibit G, Sheet 1) $\$277.5 + \$1.2 = \$278.7$	\$278.7
<u>Estimated Chapter III Passenger Revenues, Domestic Division, 1961</u> Actual (Exhibit F, Sheet 1) plus Chapter II Estimate (pg. 30) $\$252.2 + \$1.4 = \$253.6$	\$253.6
<u>Simulated Chapter III Transportation Revenues, Domestic Division, 1961</u> Actual (Exhibit F, Sheet 1) plus Chapter II Additional Simulated Transportation Revenues (Exhibit F, Sheet 2) $\$276.1 + \$1.5 = \$277.6$	\$277.6

The pages that follow set forth details of our calculations of operating expense changes with contract date receipt of the twenty CV 880 aircraft, for the Domestic Division in 1960 and 1961.

CALCULATION DETAILS FOR CHAPTER IVDOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I, II and III	Estimated Change In Expense, For Chapter IV
<u>(Millions)</u>	

FLYING OPERATIONS EXPENSEFor CV 880 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses.

--- \$+9.3

In 1961 TWA operated 16.5 million CV 880 plane-miles (page 54) and incurred \$13.3 million expense for this Group A expense. We believe the estimated 11.6 million CV 880 plane-miles operation in 1960 (page 54) would have caused TWA to incur proportionate amount of expense, calculated as follows:

$$\$13.3 \times \frac{11.6}{16.5} = \$9.3 \text{ million increase}$$

Note: There was no CV 880 Domestic Division service in 1960, so 1961 statistics are used for this calculation.

- B. Purchased public liability and property damage insurance

--- \$+0.6

In 1961 TWA had 14.6 CV 880 aircraft available for commercial service (page 54) and incurred \$0.8 million expense for this insurance. We estimate the 10.3 CV 880 aircraft available in 1960 (page 53) would have incurred a proportionate amount of this expense. The calculation is:

$$\$0.8 \times \frac{10.3}{14.6} = \$0.6 \text{ million increase}$$

Note: There was no CV 880 Domestic Division service in 1960, so 1961 statistics are used for this calculation.

Total CV 880 Flying Operations Expense

--- \$+9.9

TWA Ex. 4(c)(4), Exhibit H, page 3 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I, II and III (Millions)	Estimated Change In Expense, For Chapter IV
--	--

For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses

\$13.3

\$-5.5

This \$13.3 million expense was incurred for operating L-1049G aircraft 14.5 million plane-miles (Exhibit H, Sheet 1). We estimate the reduction of 6.0 million piston aircraft plane-miles mentioned on page 62 would have reduced piston aircraft Flying Operations expense generally in proportion to the mileage reduction. The calculation is:

$$\$13.3 \times \frac{6.0}{14.5} = \$5.5 \text{ million decrease}$$

- B. Purchased public liability and property damage insurance

\$ 0.2

NC

Total L-1049G Flying Operations Expense

\$13.5

\$-5.5

For Other Aircraft and Generally Nonrevenue

\$59.6

NC

Total Flying Operations Expense

\$73.1

\$+4.4

(Exhibit G, Sheet 21: \$73.4 - \$0.3 = \$73.1)

MAINTENANCE EXPENSE

Direct Maintenance Expense

For CV 880 Jet Aircraft Flight Equipment

\$+6.0

In 1961 TWA operated 16.5 million CV 880 plane-miles page 54 and incurred therefor \$8.5 million Direct Maintenance expense. We believe the estimated 11.6 million CV 880 plane-miles operation in 1960 (page 54) would have caused TWA incur a proportionate amount of expense, calculated as follows:

$$\$8.5 \times \frac{11.6}{16.5} = \$6.0 \text{ million increase}$$

Note: There was no CV 880 Domestic Division service in 1960, so 1961 statistics are used for this calculation.

NC - No significant change estimated for these expenses.

TWA Ex. 4(c)(4), Exhibit H, page 4 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I, II and III (Millions)	Estimated Change In Expense, For Chapter IV (Millions)
For L-1049G Piston Aircraft Flight Equipment	\$ 6.8	\$-2.8
<p>This expense was incurred for operating L-1049G aircraft 14.5 million plane-miles (Exhibit H, Sheet 1). We estimate the reduction of 6.0 million piston aircraft plane-miles mentioned on page 62 would have decreased this expense proportionately. The calculation is:</p> $\$6.8 \times \frac{6.0}{14.5} = \$2.8 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$27.2	NC
For General Ground Property and Equipment	\$ 0.8	NC
Total Direct Maintenance Expense	\$34.8	\$+3.2
Applied Maintenance Burden Expense		
For CV 880 Jet Aircraft Flight Equipment	---	\$+2.3

In 1961 TWA incurred \$3.2 million CV 880 Applied Maintenance Burden expense in connection with \$8.5 million Direct Maintenance expense for CV 880 aircraft. We estimate the \$6.0 million CV 880 Direct Maintenance expense (shown above) for 1960 would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:

$$\$3.2 \times \frac{\$6.0}{\$8.5} = \$2.3 \text{ million increase}$$

Note: There was no CV 880 Domestic Division service in 1960, so 1961 statistics are used for this calculation.

For L-1049G Piston Aircraft Flight Equipment	\$ 4.8	\$-2.0
--	--------	--------

This \$4.8 million L-1049G Applied Maintenance Burden expense was incurred in connection with \$6.8 million L-1049G Direct Maintenance expense (shown above). We estimate the \$2.8 million decrease for L-1049G Direct Maintenance expense (shown above) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:

$$\$4.8 \times \frac{\$2.8}{\$6.8} = \$2.0 \text{ million decrease}$$

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TWA Ex. 4(c)(4), Exhibit H, page 5 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I, II and III <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter IV <u> </u>
For Other Aircraft and Generally Nonrevenue	\$17.8	NC
For General Ground Property and Equipment	\$ 0.8	NC
Total Applied Maintenance Burden Expense	<u>\$23.4</u>	<u>\$+0.3</u>
Total Maintenance Expense	<u>\$58.2</u>	<u>\$+3.5</u>

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll (Exhibit G, Sheet 23: \$18.3 - \$0.1 = \$18.2)

\$18.2 \$+1.1

This expense of \$18.2 million was estimated in connection with operating 89.7 million plane-miles (Exhibit G, Sheet 23: 90.1 - 0.4 = 89.7). We estimate the addition of 5.6 million plane-miles (page 62 : 11.6 - 6.0 = 5.6) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$18.2 \times \frac{5.6}{89.7} = \$1.1 \text{ million increase}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleaned expense credits and various miscellaneous expenses (Exhibit G, Sheet 23)

\$ 2.9 NC

Total Aircraft Servicing Expense

\$21.1 \$+1.1

TWA Ex. 4(c)(4), Exhibit H, page 6 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I, II and III <u>(Millions)</u>	Estimated Change In Expense, For Chapter IV <u>(Millions)</u>
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PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll (Exhibit G, Sheet 23: \$8.6)

\$ 8.6

\$+0.6

This expense of \$8.6 million was estimated in connection with operating 86.6 million plane-miles (Exhibit G, Sheet 23: 87.0 - 0.4 = 86.6). We estimate the additional 5.6 million CV 880 plane miles (page 6: 11.6 - 6.0 = 5.6) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$8.6 \times \frac{5.6}{86.6} = \$0.6 \text{ million increase}$$

- B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside (Exhibit G, Sheet 24: \$13.0 + \$0.1 = \$13.1)

\$13.1

\$+1.2

This \$13.1 million expense was estimated in connection with passenger traffic revenue of \$256.3 million (Exhibit H, Sheet 1). We estimate the \$23.5 million increase in revenue from passenger traffic mentioned on page 63 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$13.1 \times \frac{\$23.5}{\$256.3} = \$1.2 \text{ million increase}$$

- C. Trainees and instructors, interrupted trips expense, other expenses and various miscellaneous expenses (Exhibit G, Sheet 24)

\$ 0.6

NC

Total Passenger Service Expense

\$22.3

\$+1.8

TWA Ex. 4(c)(4), Exhibit H, page 7 of 19
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IVDOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I, II and III	Estimated Change In Expense, For Chapter IV
<u>(M i l l i o n s)</u>	

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services-outside, rentals, other supplies, insurance-employee welfare, taxes-payroll and injuries, loss and damage (Exhibit G, Sheet 24: \$15.5 + \$0.1 = \$15.6)

\$15.6

\$+1.4

This \$15.6 million expense was estimated in connection with \$278.7 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$24.7 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$15.6 \times \frac{\$24.7}{\$278.7} = \$1.4 \text{ million increase}$$

- B. Other personnel, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, other expenses and various miscellaneous expenses (Exhibit G, Sheet 24)

\$ 1.5

NC

Total Traffic Servicing Expense

\$17.1

\$+1.4

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense
 (Exhibit G, Sheet 25)

\$ 1.9

\$+0.1

This \$1.9 million expense was estimated in connection with Aircraft Servicing and Traffic Servicing expense of \$21.1 and \$17.1 million respectively (shown previously). We estimate the increase in Aircraft and Traffic Servicing expenses of \$1.1 and \$1.4 million respectively (shown previously) would have been accompanied by a proportionate increase in Servicing Administration expense. The calculation is:

$$\$1.9 \times \frac{(\$1.1 + \$1.4)}{(\$21.1 + \$17.1)} = \$0.1 \text{ million increase}$$

Total Servicing Administration Expense

\$ 1.9

\$+0.1

TWA Ex. 4(c)(4), Exhibit H, page 8 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I, II and III <u>(Millions)</u>	Estimated Change In Expense, For Chapter IV
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PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, recordkeeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, tariffs, schedules and timetables; rentals, other expenses, insurance-employee welfare and taxes-payroll (Exhibit G, Sheet 25:
\$22.0 + \$0.1 = \$22.1)

\$22.1

\$+2.0

This \$22.1 million expense was estimated in connection with \$278.7 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$24.7 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$22.1 \times \frac{\$24.7}{\$278.7} = \$2.0 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies, memberships and various miscellaneous expenses (Exhibit G, Sheet 25)

\$ 2.2

NC

Total Reservations and Sales Expense

\$24.3

\$+2.0

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables (Exhibit G, Sheet 26)

\$ 4.7

\$+0.4

This \$4.7 million expense was estimated in connection with \$278.7 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$24.7 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$4.7 \times \frac{\$24.7}{\$278.7} = \$0.4 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit H, page 9 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I, II and III (Millions)	Estimated Change In Expense, For Chapter IV
B. Other promotional and publicity expenses, professional and technical fees and expenses, personnel expenses, rentals and various miscellaneous expenses (Exhibit G, Sheet 26)	\$ 0.7	NC
Total Advertising and Publicity Expense	\$ 5.4	\$+0.4
Total Promotion and Sales Expense	\$29.7	\$+2.4

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Recordkeeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll (Exhibit G, Sheet 26)

\$ 6.9 \$+0.6

This \$6.9 million expense was estimated in connection with \$278.7 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$24.7 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$6.9 \times \frac{\$24.7}{\$278.7} = \$0.6 \text{ million increase}$$

- B. General management personnel, communications purchased, professional and technical fees and expenses, memberships, corporate and fiscal expenses, taxes-other than payroll, purchased public liability and property damage insurance, legal fees and expenses, other services-outside, other supplies and various miscellaneous expenses (Exhibit G, Sheet 27)

\$ 4.3 NC

\$11.2 \$+0.6

Total General and Administrative Expense

TWA Ex. 4(c)(4), Exhibit H, page 10 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters <u>I, II and III</u>	Estimated Change In Expense, For <u>Chapter IV</u>
<u>(M i l l i o n s)</u>	

DEPRECIATION AND AMORTIZATION EXPENSE

For flight equipment, expendable spare parts
obsolescence, ground property and equipment,
and amortization of developmental and pre-
operating expense (Exhibit G, Sheet 27:
\$35.5 + \$1.0 = \$36.5)

\$36.5	\$+5.4
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Note: These figures were given to us By Price Waterhouse & Co.

TOTAL OPERATING EXPENSE

<u>\$271.1</u>	<u>\$+20.7</u>
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TWA Ex. 4(c)(4), Exhibit H, page 11 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter IV
<u>(M i l l i o n s)</u>	

FLYING OPERATIONS EXPENSE

For CV 880 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$13.3 \$+4.8

This \$13.3 million expense was incurred for operating CV 880 aircraft 16.5 million plane-miles (page 54). We estimate the additional 5.9 million CV 880 plane-miles mentioned on page 54 would have increased this expense proportionately. The calculation is:

$$\$13.3 \times \frac{5.9}{16.5} = \$4.8 \text{ million increase}$$

- B. Purchased public liability and property damage insurance

\$ 0.8 \$+0.3

This \$0.8 million expense is primarily for aircraft hull insurance for 14.6 CV 880 aircraft available for commercial service (page 54). We estimate the 5.2 increase in the available number of aircraft mentioned on page 54 would have increased this expense proportionately. The calculation is:

$$\$0.8 \times \frac{5.2}{14.6} = \$0.3 \text{ million increase}$$

Total CV 880 Flying Operations Expense

\$14.1 \$+5.1

For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-payroll, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses (Exhibit F, Sheet 28: \$9.8 - \$4.0 = \$5.8)

\$ 5.8 \$-2.9

This \$5.8 million expense was estimated for operating L-1049G aircraft 6.1 million plane-miles (Exhibit F, Sheet 28: 10.3 - 4.2 = 6.1). We estimate the reduction of 3.1 million piston aircraft plane-miles mentioned on page 62 would have reduced these Group A Flying Operations expenses generally in proportion to the mileage reduction. The calculation using L-1049G statistics is:

$$\$5.8 \times \frac{3.1}{6.1} = \$2.9 \text{ million decrease}$$

TWA Ex. 4(c)(4), Exhibit H, page 12 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter IV
	(M i l l i o n s)	
B. Insurance purchased-general	\$ 0.1	NC
Total L-1049G Flying Operations Expense	\$ 5.9	\$-2.9
For Other Aircraft and Generally Nonrevenue	\$57.3	---
Total Flying Operations Expense	\$77.3	\$+2.2
(Exhibit F, Sheet 29: \$78.1 - \$0.8 = \$77.3)		

MAINTENANCE EXPENSE

Direct Maintenance Expense

For CV 880 Jet Aircraft Flight Equipment	\$ 8.5	\$+3.0
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This \$8.5 million expense was incurred for operating CV 880 aircraft 16.5 million plane-miles (page 54. We estimate the additional 5.9 million CV 880 plane-miles mentioned on page 54 would have increased this expense proportionately. The calculation is:

$$\$8.5 \times \frac{5.9}{16.5} = \$3.0 \text{ million increase}$$

For L-1049G Piston Aircraft Flight Equipment	\$ 2.6	\$-1.3
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(Exhibit F, Sheet 29: \$4.4 - \$1.8 = \$2.6)

This \$2.6 million expense was estimated for operating L-1049G aircraft 6.1 million plane-miles (Exhibit F, Sheet 29: 10.3 - 4.2 = 6.1). We estimate the reduction of 3.1 million piston aircraft plane-miles mentioned on page 62 would have reduced piston aircraft Direct Maintenance expense generally in proportion to the mileage reduction. The calculation is:

$$\$2.6 \times \frac{3.1}{6.1} = \$1.3 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue	\$20.5	NC
For General Ground Property and Equipment	\$ 0.9	NC
Total Direct Maintenance Expense	\$32.5	\$+1.7

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TWA Ex. 4(c)(4), Exhibit H, page 13 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter IV
Applied Maintenance Burden Expense		
For CV 880 Jet Aircraft Flight Equipment	\$ 3.2	\$+1.1
<p>This \$3.2 million CV 880 Applied Maintenance Burden expense was incurred in connection with \$8.5 million CV 880 Direct Maintenance expense shown on the previous page. We estimate the \$3.0 million increase for CV 880 Direct Maintenance (previous page) would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$3.2 \times \frac{\$3.0}{\$8.5} = \$1.1 \text{ million increase}$		
For L-1049G Piston Aircraft Flight Equipment (Exhibit F, Sheet 30: \$4.0 - \$1.6 = \$2.4)	\$ 2.4	\$-1.2
<p>This \$2.4 million L-1049G Applied Maintenance Burden expense was estimated in connection with \$2.6 million L-1049G Direct Maintenance expense shown on the previous page. We estimate the \$1.3 million decrease for L-1049G Direct Maintenance expense (previous page) would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$2.4 \times \frac{\$1.3}{\$2.6} = \$1.2 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$17.0	NC
For General Ground Property and Equipment	\$ 1.1	NC
Total Applied Maintenance Burden Expense	<u>\$23.7</u>	<u>\$-0.1</u>
Total Maintenance Expense	\$56.2	\$+1.6

TWA Ex. 4(c)(4), Exhibit H, page 14 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter IV
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AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 31:
\$19.0 - \$0.2 = \$18.8)

\$18.8

\$+0.6

This \$18.8 million expense was estimated in connection with operating 84.7 million plane-miles (Exhibit F, Sheet 31: 85.6 - 0.9 = 84.7). We estimate the additional 2.8 million plane-miles (page 6: 5.9 - 3.1 = 2.8) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$18.8 \times \frac{2.8}{84.7} = \$0.6 \text{ million increase}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses (Exhibit F, Sheet 31)

\$ 3.4

NC

Total Aircraft Servicing Expense

\$22.2

\$+0.6

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 31: \$9.0 - \$0.1 = \$8.9)

\$ 8.9

\$+0.3

This \$8.9 million expense was estimated in connection with operating 81.2 million plane-miles (Exhibit F, Sheet 31: 82.1 - 0.9 = 81.2). We estimate the additional 2.8 million plane-miles (page 6: 5.9 - 3.1 = 2.8) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$8.9 \times \frac{2.8}{81.2} = \$0.3 \text{ million increase}$$

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TWA Ex. 4(c)(4), Exhibit H, page 15 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter IV
<u>(M i l l i o n s)</u>	

- B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside (Exhibit F, Sheet 32: \$13.2 + \$0.1 = \$13.3)

\$13.3

\$+0.6

This \$13.3 million expense was estimated in connection with passenger traffic revenue of \$253.6 million (Exhibit H, Sheet 1). We estimate the \$12.2 million increase in revenue from passenger traffic mentioned on page 63 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$13.3 \times \frac{\$12.2}{\$253.6} = \$0.6 \text{ million increase}$$

- C. Trainees and instructors, rentals, interrupted trips expense and various miscellaneous expenses (Exhibit F, Sheet 32)

\$ 0.6

NC

Total Passenger Service Expense

\$22.8

\$+0.9

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, insurance-employee welfare, injuries, loss and damage, taxes-payroll, other services-outside, rentals and other supplies (Exhibit F, Sheet 32: \$16.0 + \$0.1 = \$16.1)

\$16.1

\$+0.7

This \$16.1 million expense was estimated in connection with \$277.6 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$12.8 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$16.1 \times \frac{\$12.8}{\$277.6} = \$0.7 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit H, page 16 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter IV
B. Other personnel, personnel expenses, communications purchased, light, heat, power and water, other services-associ- ated companies, stationery, printing and office supplies, insurance-traffic liability, other expenses and various miscellaneous expenses (Exhibit F, Sheet 32)	\$ 1.6	NC
Total Traffic Servicing Expense	\$17.7	\$+0.7

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense (Exhibit F, Sheet 33)	\$ 2.2	\$+0.1
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This \$2.2 million expense was estimated in connection with Aircraft Servicing and Traffic Servicing expenses of \$22.2 and \$17.7 million respectively (shown previously). We estimate the increase in Aircraft and Traffic Servicing expenses of \$0.6 and \$0.7 million respectively (shown previously) would have been accompanied by a proportionate increase in Servicing Administration expense. The calculation is:

$$\$2.2 \times \frac{(\$0.6 + \$0.7)}{(\$22.2 + \$17.7)} = \$0.1 \text{ million increase}$$

Total Servicing Administration Expense	\$ 2.2	\$+0.1
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TWA Ex. 4(c)(4), Exhibit H, page 17 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter IV <u>(Millions)</u>
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PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, recordkeeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, tariffs, schedules and timetables, other expenses, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 33: \$22.0 + \$0.1 = \$22.1)

\$22.1

\$+1.0

This \$22.1 million expense was estimated in connection with \$277.6 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$12.8 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$22.1 \times \frac{\$12.8}{\$277.6} = \$1.0 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, stationery, printing and office supplies, other supplies and various miscellaneous expenses (Exhibit F, Sheet 33)

\$ 2.2

NC

Total Reservations and Sales Expense

\$24.3

\$+1.0

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables (Exhibit F, Sheet 34)

\$ 6.3

\$+0.3

This \$6.3 million expense was estimated in connection with \$277.6 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$12.8 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$6.3 \times \frac{\$12.8}{\$277.6} = \$0.3 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit H, page 18 of 19
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IV

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter IV
B. Other promotional and publicity expenses, rentals and various miscellaneous ex- penses (Exhibit F, Sheet 34)	\$ 0.6	NC
Total Advertising and Publicity Expense	\$6.9	\$+0.3
Total Promotion and Sales Expense	\$31.2	\$+1.3

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Recordkeeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll (Exhibit F, Sheet 34)

\$ 9.1 \$+0.4

This \$9.1 million expense was estimated in connection with \$277.6 million transportation revenue (Exhibit H, Sheet 1). We estimate the \$12.8 million increase in simulated transportation revenue (page 63) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$9.1 \times \frac{\$12.8}{\$277.6} = \$0.4 \text{ million increase}$$

- B. General management personnel, communications purchased, professional and technical fees and expenses, other services-outside, other supplies, memberships, corporate and fiscal expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses

\$ 4.7 NC

Total General and Administrative Expense

\$13.8 \$+0.4

TWA Ex. 4(c)(4), Exhibit H, page 19 of 19
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER IVDOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I and II <u>(M i l l i o n s)</u>	Estimated Change In Expense, For Chapter IV
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DEPRECIATION AND AMORTIZATION EXPENSE

For flight equipment, expendable spare parts
 obsolescence, ground property and equipment,
 and amortization of developmental and pre-
 operating expenses (Exhibit F, Sheet 35:
 $\$43.3 + \$1.8 = \$45.1$)

\$45.1

+\$2.6

Note: These figures were given to us by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE\$288.5+\$10.4

TWA Ex. 4(c)(4), Exhibit J, page 1 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR OPERATING EXPENSE CHANGES, CHAPTER V
FOR A FLEET OF THIRTY CV 880 AIRCRAFT

For our calculation of operating expense changes that would have occurred if TWA had received a fleet of thirty CV 880 jet aircraft rather than twenty aircraft, as mentioned on page 65, we used operating statistics and expense estimates from Exhibits F and H, expense data from CAB Form 41 annual reports and the following statistics.

	<u>Millions</u>
<u>CV 880 Actual Plane-Miles, Domestic Division, 1962</u>	23.2
<u>CV 880 Actual Plane-Miles, Domestic Division, 1963</u>	26.4
These plane-miles are our annual summaries of figures shown in TWA's Monthly Operating Statistics, Schedule 3-70M and, as of October 1963, Report 3-452M.	
<u>Chapter IV Simulated Transportation Revenues, Domestic Division, 1960</u>	\$303.4
Chapter III Simulated Transportation Revenues (Exhibit H, Sheet 1) plus Chapter IV Additional System Revenues (pg. 63): \$278.7 + \$24.7 = \$303.4 million	
<u>Chapter IV Simulated Transportation Revenues, Domestic Division, 1961</u>	\$290.4
Chapter III Simulated Transportation Revenues (Exhibit H, Sheet 1) plus Chapter IV Additional System Revenues (pg. 63): \$277.6 + \$12.8 = \$290.4 million	
<u>Chapter IV Simulated Transportation Revenues, Domestic Division, 1962</u>	\$300.6
Actual (Exhibit F, Sheet 1) plus Chapter II Additional Simulated Transportation Revenues (Exhibit F, Sheet 2): \$298.5 + \$2.1 = \$300.6 million	
<u>Chapter IV Simulated Transportation Revenues, Domestic Division, 1963</u>	\$343.5
Actual (Exhibit F, Sheet 1) plus Chapter II Additional Simulated Transportation Revenues (Exhibit F, Sheet 2): \$341.5 + \$2.0 = \$343.5 million	

TWA Ex. 4(c)(4), Exhibit J, page 2 of 36
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

MillionsFlying Operations Expense (excluding Insurance Purchased-General), 1961

L-1049G Aircraft; Estimated from Exhibit H, Sheet 11:

\$5.8 - \$2.9 = \$2.9 million

\$ 2.9

L-749 Aircraft; Actual from CAB Form 41, Schedule P-5.2

10.7

L-049 Aircraft; Actual from CAB Form 41, Schedule P-5.2

9.2

Flying Operations Expense for L-1049G, L-749, L-049

\$22.8

Direct Maintenance Expense, 1961

L-1049G Aircraft; Estimated from Exhibit H, Sheet 12:

\$2.6 - \$1.3 = \$1.3 million

\$ 1.3

L-749 Aircraft; Actual from CAB Form 41, Schedule P-5.2

3.9

L-049 Aircraft; Actual from CAB Form 41, Schedule P-5.2

2.6

Direct Maintenance Expense for L-1049G, L-749, L-049

\$ 7.8

Applied Maintenance Burden Expense, 1961

L-1049G Aircraft; Estimated from Exhibit H, Sheet 13:

\$2.4 - \$1.2 = \$1.2 million

\$ 1.2

L-749 Aircraft; Actual from CAB Form 41, Schedule P-5.2

4.0

L-049 Aircraft; Actual from CAB Form 41, Schedule P-5.2

2.8

Applied Maintenance Burden Expense for L-1049G, L-749, L-049

\$ 8.0

The pages that follow set forth details of our calculations of operating expense changes with a fleet of thirty rather than twenty CV 880 aircraft for the Domestic Division in the years 1960-1963.

TWA Ex. 4(c)(4), Exhibit J, page 3 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I through IV	Estimated Change In Expense, For Chapter V
(Millions)	

FLYING OPERATIONS EXPENSE

For CV 880 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$ 9.3

\$+4.7

This \$9.3 million estimated expense (Exhibit H, Sheet 2) was for operating CV 880 aircraft 11.6 million plane-miles. We believe the estimated 5.8 million additional CV 880 plane-miles (67) would have caused TWA to incur a proportionate increase in this expense, calculated as follows:

$$\$9.3 \times \frac{5.8}{11.6} = \$4.7 \text{ million increase}$$

- B. Purchased public liability and property damage insurance

\$ 0.6

\$+0.3

This \$0.6 million estimated expense was for 10.3 CV 880 aircraft available for commercial service (Exhibit H, Sheet 2). We estimate the additional 5.1 aircraft available (page 66) would have incurred a proportionate increase in this expense. The calculation is:

$$\$0.6 \times \frac{5.1}{10.3} = \$0.3 \text{ million increase}$$

Total CV 880 Flying Operations Expense

\$ 9.9

\$+5.0

For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses

\$ 7.8

\$-2.8

This \$7.8 million expense (Exhibit H, Sheet 3: \$13.5 - \$5.5 = \$7.8) was estimated for operating L-1049G aircraft 8.5 million plane-miles (Exhibit H, Sheet 3: 14.5 - 6.0 = 8.5). We estimate the reduction of 3.0 million plane-miles mentioned on page 70 would have reduced expense proportionately. The calculation is:

$$\$7.8 \times \frac{3.0}{8.5} = \$2.8 \text{ million decrease}$$

AX-303

TWA Ex. 4(c)(4), Exhibit J, page 4 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I through IV (M i l l i o n s)	Estimated Change In Expense, For (Chapter V
B. Purchased public liability and property damage insurance	\$ 0.2	NC
Total L-1049G Flying Operations Expense	\$ 8.0	\$-2.8

Note: The above piston aircraft expense change calculation and certain others that follow use statistics for the L-1049G aircraft. We selected statistics for this aircraft to be representative of several types of Lockheed Constellation aircraft which would have shown reduced plane-miles with additional CV 880 aircraft available for commercial service.

For Other Aircraft and Generally Nonrevenue	\$59.6	NC
Total Flying Operations Expense (Exhibit H, Sheet 3: \$73.1 + \$4.4 = \$77.5)	\$77.5	\$+2.2

MAINTENANCE EXPENSE

Direct Maintenance Expense		
For CV 880 Jet Aircraft Flight Equipment	\$ 6.0	\$+3.0

This \$6.0 million expense (Exhibit H, Sheet 3) was estimated for operating CV 880 aircraft 11.6 million plane-miles. We believe the estimated 5.8 million additional plane-miles (page 67) would have caused TWA to incur a proportionate increase in this expense, calculated as follows:

$$\$6.0 \times \frac{5.8}{11.6} = \$3.0 \text{ million increase}$$

For L-1049G Piston Aircraft Flight Equipment	\$ 4.0	\$-1.4
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This \$4.0 million expense (Exhibit H, Sheet 4: \$6.8 - \$2.8 = \$4.0) was estimated for operating L-1049G aircraft 8.5 million plane-miles (Exhibit H, Sheet 4: 14.5 - 6.0 = 8.5). We estimate the reduction of 3.0 million plane-miles mentioned on page 70 would have reduced expense proportionately. The calculation is:

$$\$4.0 \times \frac{3.0}{8.5} = \$1.4 \text{ million decrease}$$

NC - No significant change estimated for these expenses.

TWA Ex. 4(c)(4), Exhibit J, page 5 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I through IV (Millions)	Estimated Change In Expense, For Chapter V
For Other Aircraft and Generally Nonrevenue	\$27.2	NC
For General Ground Property and Equipment	\$ 0.8	NC
Total Direct Maintenance Expense (Exhibit H, Sheet 4: $\$34.8 + \$3.2 = \$38.0$)	\$38.0	\$+1.6
Applied Maintenance Burden Expense For CV 880 Jet Aircraft Flight Equipment	\$ 2.3	\$+1.2
<p>This estimated \$2.3 million expense (Exhibit H, Sheet 4) is in connection with \$6.0 million Direct Maintenance expense shown above. We estimate the \$3.0 million increase in Direct Maintenance expense shown above would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$2.3 \times \frac{\$3.0}{\$6.0} = \$1.2 \text{ million increase}$		
For L-1049G Piston Aircraft Flight Equipment	\$ 2.8	\$-1.0
<p>This \$2.8 million Applied Maintenance Burden expense (Exhibit H, Sheet 4: $\\$4.8 - \\$2.0 = \\$2.8$) was estimated in connection with \$4.0 million Direct Maintenance expense shown above. We estimate the \$1.4 million reduction in Direct Maintenance shown above would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$2.8 \times \frac{\$1.4}{\$4.0} = \$1.0 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$17.8	NC
For General Ground Property and Equipment	\$ 0.8	NC
Total Applied Maintenance Burden Expense	\$23.7	\$+0.2
Total Maintenance Expense (Exhibit H, Sheet 5: $\$58.2 + \$3.5 = \$61.7$)	\$61.7	\$+1.8

AX-305

TWA Ex. 4(c)(4), Exhibit J, page 6 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I through IV	Estimated Change In Expense, For Chapter V
(M i l l i o n s)	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$19.3	\$+0.6
--------	--------

This \$19.3 million expense (Exhibit H, Sheet 5: \$18.2 + \$1.1 = \$19.3) was estimated in connection with operating 95.3 million plane-miles (Exhibit H, Sheet 5: 89.7 + 5.6 = 95.3). We estimate the additional 2.8 million plane-miles (70: 5.8 - 3.0 = 2.8) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$19.3 \times \frac{2.8}{95.3} = \$0.6 \text{ million increase}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other unclassified expense credits and various miscellaneous expenses (Exhibit H, Sheet 5)

\$ 2.9	NC
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Total Aircraft Servicing Expense

\$22.2	\$+0.6
--------	--------

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll

\$ 9.2	\$+0.3
--------	--------

This \$9.2 million expense (Exhibit H, Sheet 6: \$8.6 + \$0.6 = \$9.2) was estimated in connection with operating 92.2 million plane-miles (Exhibit H, Sheet 6: 86.6 + 5.6 = 92.2). We estimate the additional 2.8 million CV 880 plane-miles (70: 5.8 - 3.0 = 2.8) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$9.2 \times \frac{2.8}{92.2} = \$0.3 \text{ million increase}$$

CALCULATION DETAILS FOR CHAPTER VDOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I through IV (Millions)	Estimated Change In Expense, For Chapter V
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside	\$14.3	\$+0.7
<p>This \$14.3 million expense (Exhibit H, Sheet 6: \$13.1 + \$1.2 = \$14.3) was estimated in connection with passenger traffic revenue of \$279.8 million (Exhibit H, Sheet 6: \$256.3 + \$23.5 = \$279.8). We estimate the \$12.9 million increase in revenue from passenger traffic mentioned on page 70 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:</p> $\$14.3 \times \frac{\$12.9}{\$279.8} = \$0.7 \text{ million increase}$		
C. Trainees and instructors, interrupted trips expense, other expenses and vari- ous miscellaneous expenses (Exhibit H, Sheet 6)	\$ 0.6	NC
Total Passenger Service Expense	\$24.1	\$+1.0

TRAFFIC SERVICING EXPENSE

A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, other services- outside, rentals, other supplies, insur- ance-employee welfare, taxes-payroll and injuries, loss and damage	\$17.0	\$+0.8
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This \$17.0 million expense (Exhibit H, Sheet 7: \$15.6 + \$1.4 = \$17.0) was estimated in connection with \$303.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$13.5 million increase in revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$17.0 \times \frac{\$13.5}{\$303.4} = \$0.8 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 8 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I through IV	Estimated Change In Expense, For Chapter V
(M i l l i o n s)	

B. Other personnel, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, other expenses and various miscellaneous expenses (Exhibit H, Sheet 7)

\$ 1.5	NC
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Total Traffic Servicing Expense

\$18.5	\$+0.8
--------	--------

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense

\$ 2.0	\$+0.1
--------	--------

This \$2.0 million expense (Exhibit H, Sheet 7: \$1.9 + \$0.1 = \$2.0) was estimated in connection with Aircraft Servicing and Traffic Servicing expense of \$22.2 and \$18.5 million respectively (shown previously). We estimate the increase in Aircraft and Traffic Servicing expenses of \$0.6 and \$0.8 million respectively (shown previously) would have been accompanied by a proportionate increase in Servicing Administration expense. The calculation is:

$$\$2.0 \times \left(\frac{\$0.6 + \$0.8}{\$22.2 + \$18.5} \right) = \$0.1 \text{ million increase}$$

Total Servicing Administration Expense

\$ 2.0	\$+0.1
--------	--------

PROMOTION AND SALES EXPENSE

Reservations and Sales

A. General aircraft and traffic handling personnel, passenger handling personnel, recordkeeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, tariffs, schedules and timetables, rentals, other expenses, insurance-employee welfare and taxes-payroll

\$24.1	\$+1.1
--------	--------

This \$24.1 million expense (Exhibit H, Sheet 8: \$22.1 + \$2.0 = \$24.1) was estimated in connection with \$303.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$13.5 million increase in revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$24.1 \times \frac{\$13.5}{\$303.4} = \$1.1 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 9 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1960

	Actual Expense With Revisions of Chapters I through IV (Millions)	Estimated Change In Expense, For Chapter V (Millions)
B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, other supplies, stationery, printing and office supplies, memberships and various miscellaneous expenses (Exhibit H, Sheet 8)	\$ 2.2	NC
Total Reservations and Sales Expense	\$26.3	\$+1.1
Advertising and Publicity		
A. Other personnel, advertising and tariffs, schedules and timetables	\$ 5.1	\$+0.2
<p>This \$5.1 million expense (Exhibit H, Sheet 8: \$4.7 + \$0.4 = \$5.1) was estimated in connection with \$303.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$13.5 million increase in revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$5.1 \times \frac{\$13.5}{\$303.4} = \$0.2 \text{ million increase}$		
B. Other promotional and publicity expenses, professional and technical fees and expenses, personnel expenses, rentals and various miscellaneous expenses (Exhibit H, Sheet 9)	\$ 0.7	NC
Total Advertising and Publicity Expense	\$ 5.8	\$+0.2
Total Promotion and Sales Expense	\$32.1	\$+1.3

TWA Ex. 4(c)(4), Exhibit J, page 10 of 36
(Exhibits B-J to C. & C. Report-

Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1960

Actual Expense With Revisions of Chapters I through IV (Millions)	Estimated Change In Expense, For Chapter V
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GENERAL AND ADMINISTRATIVE EXPENSE

- A. Recordkeeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll

\$ 7.5

\$+0.3

This \$7.5 million expense (Exhibit H, Sheet 9: \$6.9 + \$0.6 = \$7.5) was estimated in connection with \$303.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$13.5 million increase in revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$7.5 \times \frac{\$13.5}{\$303.4} = \$0.3 \text{ million increase}$$

- B. General management personnel, communications purchased, professional and technical fees and expenses, memberships, corporate and fiscal expenses, taxes-other than payroll, purchased public liability and property damage insurance, legal fees and expenses, other services-outside, other supplies and various miscellaneous expenses (Exhibit H, Sheet 9)

\$ 4.3

NC

Total General and Administrative Expense

\$11.8

\$+0.3

DEPRECIATION AND AMORTIZATION EXPENSE

For flight equipment, expendable spare parts obsolescence, ground property and equipment, and amortization of developmental and pre-operating expenses (Exhibit H, Sheet 10: \$36.5 + \$5.4 = \$41.9)

\$41.9

\$+2.7

Note: These figures were furnished by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE

\$291.8

\$+10.8

Exhibit H, Sheet 10: \$271.1 + \$20.7 = \$291.8)

TWA Ex. 4(c)(4), Exhibit J, page 11 of 36
 (Exhibits B-J to C. & C. Report-
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CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I, II and IV	Estimated Change In Expense, For Chapter V
(Millions)	

FLYING OPERATIONS EXPENSE

For CV 880 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$18.1	\$+9.1
--------	--------

This \$18.1 million expense (Exhibit H, Sheet 11: \$13.3 + \$4.8 = \$18.1) was estimated for operating CV 880 aircraft 22.4 million plane-miles (Exhibit H, Sheet 11: 16.5 + 5.9 = 22.4). We estimate the additional 11.2 million CV 880 plane-miles mentioned on page 67 would have increased this expense proportionately. The calculation is:

$$\$18.1 \times \frac{11.2}{22.4} = \$9.1 \text{ million increase}$$

- B. Insurance purchased-general

\$ 1.1	\$+0.5
--------	--------

This \$1.1 million expense (Exhibit H, Sheet 11: \$0.8 + \$0.3 = \$1.1) was estimated primarily for hull insurance for 19.8 CV 880 aircraft available for commercial service (Exhibit H, Sheet 11: 14.6 + 5.2 = 19.8). We estimate the additional 9.9 CV 880 aircraft available mentioned on page 66 would have increased this expense proportionately. The calculation is:

$$\$1.1 \times \frac{9.9}{19.8} = \$0.5 \text{ million increase}$$

Total CV 880 Flying Operations Expense

\$19.2	\$+9.6
--------	--------

TWA Ex. 4(c)(4), Exhibit J, page 12 of 36
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I, II and IV (Millions)	Estimated Change In Expense, For Chapter V
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For L-1049G, L-749 and L-049 Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-payroll, taxes-other than payroll, insurance-employee welfare and various miscellaneous expenses

\$22.8

\$-5.4

This \$22.8 million expense is developed in detail in Exhibit J, Sheet 2. In 1961, the L-1049G aircraft actually operated 10.3 million plane-miles (Exhibit F, Sheet 1) and TWA incurred Group A Flying Operations expense of \$9.8 million for L-1049G aircraft. Using L-1049G Group A expense as representative of Lockheed four-engine Constellation aircraft that would have flown fewer plane-miles with the additional CV 880 operations, we estimate the reduction of 5.7 million piston plane-miles mentioned on page 70 would have reduced Group A expenses as follows:

$$\$9.8 \times \frac{5.7}{10.3} = \$5.4 \text{ million decrease}$$

- B. Insurance purchased-general

\$ 0.2

NC

Total L-1049G, L-749 and L-049 Flying Operations Expense

\$23.0

\$-5.4

For Other Aircraft and Generally Nonrevenue

\$37.3

NC

Total Flying Operations Expense

\$79.5

\$+4.2

(Exhibit H, Sheet 12: \$77.3 + \$2.2 = \$79.5)

MAINTENANCE EXPENSE

Direct Maintenance Expense

For CV 880 Jet Aircraft Flight Equipment

\$11.5

\$+5.8

This \$11.5 million expense (Exhibit H, Sheet 12: \$8.5 + \$3.0 = \$11.5) was estimated for operating CV 880 aircraft 22.4 million plane-miles (Exhibit H, Sheet 12: 16.5 + 5.9 = 22.4). We estimate the additional 11.2 million CV 880 plane-miles mentioned on page 67 would have increased this expense proportionately. The calculation is:

$$\$11.5 \times \frac{11.2}{22.4} = \$5.8 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 13 of 36
(Exhibits B-J to C. & C. Report-
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CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I, II and IV (Millions)	Estimated Change In Expense, For Chapter V
For L-1049G, L-749 and L-049 Piston Aircraft Flight Equipment	\$ 7.8	\$-2.4
<p>This \$7.8 million expense is developed in detail in Exhibit J, Sheet 2. In 1961, the L-1049G aircraft actually operated 10.3 million plane-miles (Exhibit F, Sheet 1) and TWA incurred Direct Maintenance expense of \$4.4 million for L-1049G aircraft. Using L-1049G expense as representative of Lockheed four-engine Constellation aircraft that would have flown fewer plane-miles with the additional cv 880 operations, we estimate the reduction of 5.7 million piston plane-miles mentioned on page 70 would have reduced Direct Maintenance expense as follows:</p> $\$4.4 \times \frac{5.7}{10.3} = \$2.4 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$14.0	NC
For General Ground Property and Equipment	\$ 0.9	NC
Total Direct Maintenance Expense	<u>\$34.2</u>	<u>\$+3.4</u>
Applied Maintenance Burden Expense		
For CV 880 Jet Aircraft Flight Equipment	\$ 4.3	\$+2.4

This \$4.3 million Applied Maintenance Burden expense (Exhibit H, Sheet 13: \$3.2 + \$1.1 = \$4.3) was estimated in connection with the \$11.5 million Direct Maintenance shown above. We estimate the \$5.8 million increase in Direct Maintenance shown above would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:

$$\$4.3 \times \frac{\$5.8}{\$11.5} = \$2.4 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 14 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)
CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I, II and IV	Estimated Change In Expense, For Chapter V
	<u>(Millions)</u>	
For L-1049G, L-749 and L-049 Piston Aircraft Flight Equipment	\$ 8.0	\$-2.2

This \$8.0 million expense is developed in detail in Exhibit J, Sheet 2. In 1961, the L-1049G aircraft were assigned \$4.0 million Applied Maintenance Burden expense in connection with the \$4.4 million L-1049G Direct Maintenance expense previously shown. Using L-1049G expense as representative of Lockheed four-engine Constellation aircraft that would have flown fewer plane-miles with the additional CV 880 operations, we estimate the reduction of \$2.4 million in Direct Maintenance would have reduced piston aircraft Applied Maintenance Burden as follows:

$$\$4.0 \times \frac{\$2.4}{\$4.4} = \$2.2 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue	\$10.2	NC
For General Ground Property and Equipment	\$ 1.1	NC
Total Applied Maintenance Burden Expense	<u>\$23.6</u>	<u>\$+0.2</u>
Total Maintenance Expense (Exhibit H, Sheet 13: \$56.2 + \$1.6 = \$57.8)	<u>\$57.8</u>	<u>\$+3.6</u>

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$19.4 \$+1.2

This \$19.4 million expense (Exhibit H, Sheet 14: \$18.8 + \$0.6 = \$19.4) was estimated in connection with operating 87.5 million plane-miles (Exhibit H, Sheet 14: 84.7 + 2.8 = 87.5). We estimate the additional 5.5 million plane-miles (70: 11.2 - 5.7 = 5.5) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$19.4 \times \frac{5.5}{87.5} = \$1.2 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 15 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I, II and IV (Millions)	Estimated Change In Expense, For Chapter V
B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companied, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses (Exhibit H, Sheet 14)	\$ 3.4	NC
Total Aircraft Servicing Expense	\$22.8	\$+1.2
<u>PASSENGER SERVICE EXPENSE</u>		
A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll	\$ 9.2	\$+0.6
<p>This \$9.2 million expense (Exhibit H, Sheet 14: \$8.9 + \$0.3 = \$9.2) was estimated in connection with operating 84.0 million plane-miles (Exhibit H, Sheet 14: 81.2 + 2.8 = 84.0). We estimate the additional 5.5 million plane-miles (70: 11.2 - 5.7 = 5.5) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$9.2 \times \frac{5.5}{84.0} = \$0.6 \text{ million increase}$		
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside	\$13.9	\$+1.3
<p>This \$13.9 million expense (Exhibit H, Sheet 15: \$13.3 + \$0.6 = \$13.9) was estimated in connection with passenger traffic revenue of \$265.8 million (Exhibit H, Sheet 15: \$253.6 + \$12.2 = \$265.8). We estimate the \$24.3 million increase in revenue from passenger traffic mentioned on page 70 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:</p> $\$13.9 \times \frac{\$24.3}{\$265.8} = \$1.3 \text{ million increase}$		
C. Trainees and instructors, rentals, interrupted trips expense and various miscellaneous expenses (Exhibit H, Sheet 15)	\$ 0.6	NC
Total Passenger Service Expense	\$23.7	\$+1.9

TWA Ex. 4(c)(4), Exhibit J, page 16 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I, II and IV (Millions)	Estimated Change In Expense, For Chapter V
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TRAFFIC SERVICING EXPENSE

A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, insurance-employee welfare, injuries, loss and damage, taxes-payroll, other services-outside, rentals and other supplies	\$16.8	\$+1.5
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This \$16.8 million expense (Exhibit H, Sheet 15: \$16.1 + \$0.7 = \$16.8) was estimated in connection with \$290.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$25.5 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$16.8 \times \frac{\$25.5}{\$290.4} = \$1.5 \text{ million increase}$$

B. Other personnel, personnel expenses, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, insurance-traffic liability, other expenses and various miscellaneous expenses (Exhibit H, Sheet 16)	\$ 1.6	NC
Total Traffic Servicing Expense	\$18.4	\$+1.5

SERVICING ADMINISTRATION EXPENSE

Total Servicing Administration Expense	\$ 2.3	\$+0.1
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This \$2.3 million expense (Exhibit H, Sheet 16: \$2.2 + \$0.1 = \$2.3) was estimated in connection with Aircraft Servicing and Traffic Servicing expenses of \$22.8 and \$18.4 million respectively (shown previously). We estimate the increase in Aircraft and Traffic Servicing expenses of \$1.2 and \$1.5 million respectively (shown previously) would have been accompanied by a proportionate increase in Servicing Administration expense. The calculation is:

$$\$2.3 \times \frac{(\$1.2 + \$1.5)}{(\$22.8 + \$18.4)} = \$0.1 \text{ million increase}$$

Total Servicing Administration Expense	\$ 2.3	\$+0.1
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TWA Ex. 4(c)(4), Exhibit J, page 17 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I, II and IV	Estimated Change In Expense, For Chapter V
(Millions)	

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, recordkeeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, tariffs, schedules and timetables, other expenses, insurance-employee welfare and taxes-payroll

\$23.1

\$+2.0

This \$23.1 million expense (Exhibit H, Sheet 17: \$22.1 + \$1.0 = \$23.1) was estimated in connection with \$290.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$25.5 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$23.1 \times \frac{\$25.5}{\$290.4} = \$2.0 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, stationery, printing and office supplies, other supplies and various miscellaneous expenses (Exhibit H, Sheet 17)

\$ 2.2

NC

Total Reservations and Sales Expense

\$25.3

\$+2.0

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables

\$ 6.6

\$+0.6

This \$6.6 million expense (Exhibit H, Sheet 17: \$6.3 + \$0.3 = \$6.6) was estimated in connection with \$290.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$25.5 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$6.6 \times \frac{\$25.5}{\$290.4} = \$0.6 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 18 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

	Actual Expense With Revisions of Chapters I, II and IV (Millions)	Estimated Change In Expense, For Chapter V
B. Other promotional and publicity expenses, rentals, and various miscellaneous expenses (Exhibit H, Sheet 18)	\$ 0.6	NC
Total Advertising and Publicity Expense	\$ 7.2	\$+0.6
Total Promotion and Sales Expense	\$32.5	\$+2.6

GENERAL AND ADMINISTRATIVE EXPENSE

A. Recordkeeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance- employee welfare and taxes-payroll	\$ 9.5	\$+0.8
--	--------	--------

This \$9.5 million expense (Exhibit H, Sheet 18: \$9.1 + \$0.4 = \$9.5) was estimated in connection with \$290.4 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$25.5 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$9.5 \times \frac{\$25.5}{\$290.4} = \$0.8 \text{ million increase}$$

B. General management personnel, communications purchased, professional and technical fees and expenses, other services-outside, other supplies, memberships, corporate and fiscal expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses (Exhibit H, Sheet 18)	\$ 4.7	NC
Total General and Administrative Expense	\$14.2	\$+0.8

TWA Ex. 4(c)(4), Exhibit J, page 19 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1961

Actual Expense With Revisions of Chapters I, II and IV	Estimated Change In Expense, For Chapter V
(M i l l i o n s)	

DEPRECIATION AND AMORTIZATION EXPENSE

For flight equipment, expendable spare parts,
obsolescence, ground property and equipment,
and amortization of developmental and pre-
operating expenses (Exhibit H, Sheet 19:
 $\$45.1 + \$2.6 = \$47.7$)

\$ 47.7

\$ +5.7

Note: These figures were furnished by Price Waterhouse & Co.

TOTAL OPERATING EXPENSES

(Exhibit H, Sheet 19: $\$288.5 + \$10.4 = \$298.9$)

\$298.9

\$+21.6

TWA Ex. 4(c)(4), Exhibit J, page 20 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1962

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
(M i l l i o n s)	

FLYING OPERATIONS EXPENSE

For CV 880 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$18.9	\$+9.5
--------	--------

This \$18.9 million expense was incurred for operating CV 880 aircraft 23.2 million plane-miles (Exhibit J, Sheet 1). We estimate the additional 11.6 million CV 880 plane-miles mentioned on page 67 would have increased this expense proportionately. The calculation is:

$$\$18.9 \times \frac{11.6}{23.2} = \$9.5 \text{ million increase}$$

- B. Insurance purchased-general

\$ 1.0	\$+0.5
--------	--------

This \$1.0 million expense was incurred primarily for hull insurance on 20.0 aircraft available for commercial service (Exhibit II). We estimate the increase of 10.0 CV 880 aircraft available mentioned on page 66 would have increased this expense proportionately. The calculation is:

$$\$1.0 \times \frac{10.0}{20.0} = \$0.5 \text{ million increase}$$

Total CV 880 Flying Operations Expense

\$19.9	\$+10.0
--------	---------

For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 8.9	\$-5.8
--------	--------

This \$8.9 million expense (Exhibit F, Sheet 43: \$9.8 - \$0.9 = \$8.9) was estimated for operating L-1049G aircraft 9.1 million plane-miles (Exhibit F, Sheet 43: 10.0 - 0.9 = 9.1). We estimate the reduction of 5.9 million plane-miles mentioned on page 70 would have been accompanied by a proportionate reduction in this kind of expense. The calculation:

$$\$8.9 \times \frac{5.9}{9.1} = \$5.8 \text{ million decrease}$$

CALCULATION DETAILS FOR CHAPTER VDOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter V
B. Insurance purchased-general	#	NC
Total L-1049G Flying Operations Expense	\$ 8.9	\$-5.8
For Other Aircraft and Generally Nonrevenue	\$54.3	NC
Total Flying Operations Expense (Exhibit F, Sheet 44: \$82.4 + \$0.7 = \$83.1)	\$83.1	\$+4.2

MAINTENANCE EXPENSEDirect Maintenance Expense

For CV 880 Jet Aircraft Flight Equipment	\$11.8	\$+5.9
--	--------	--------

This \$11.8 million expense was incurred for operating CV 880 aircraft 23.2 million plane-miles (Exhibit J, Sheet 1). We estimate the additional 11.6 million CV 880 plane-miles mentioned on page 67 would have increased this expense proportionately. The calculation is:

$$\$11.8 \times \frac{11.6}{23.2} = \$5.9 \text{ million increase}$$

For L-1049G Piston Aircraft Flight Equipment	\$ 4.5	\$-2.9
--	--------	--------

This \$4.5 million expense (Exhibit F, Sheet 44: \$4.9 - \$0.4 = \$4.5) was estimated for operating L-1049G aircraft 9.1 million plane-miles (Exhibit F, Sheet 44: 10.0 - 0.9 = 9.1). We estimate the reduction of 5.9 million plane-miles mentioned on page 70 would have been accompanied by a proportionate reduction in this kind of expense. The calculation:

$$\$4.5 \times \frac{5.9}{9.1} = \$2.9 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue	\$18.9	NC
For General Ground Property and Equipment	\$ 1.6	NC
Total Direct Maintenance Expense	\$36.8	\$+3.0

* This symbol is used to designate an amount too small to be significant in these estimates which are rounded to the nearest \$0.1 million.

TWA Ex. 4(c)(4), Exhibit J, page 22 of 36
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER VDOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter V
Applied Maintenance Burden Expense		
For CV 880 Jet Aircraft Flight Equipment	\$ 6.2	\$+3.1
<p>This \$6.2 million expense was incurred in connection with the \$11.8 million Direct Maintenance expense shown above. We estimate the \$5.9 million increase shown above would have been accompanied by a proportionate increase in this expense. The calculation is:</p> $\$6.2 \times \frac{\$5.9}{\$11.8} = \$3.1 \text{ million increase}$		
For L-1049G Piston Aircraft Flight Equipment	\$ 3.4	\$-2.2
<p>This \$3.4 million Applied Maintenance Burden expense (Exhibit F, Sheet 45: \$3.7 - \$0.3 = \$3.4) was estimated in connection with the \$4.5 million Direct Maintenance expense shown above. We estimate the \$2.9 million decrease in L-1049G aircraft Direct Maintenance expense would have been accompanied by a proportionate decrease in Applied Maintenance Burden expense. The calculation is:</p> $\$3.4 \times \frac{\$2.9}{\$4.5} = \$2.2 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$14.1	NC
For General Ground Property and Equipment	\$ 1.9	NC
Total Applied Maintenance Burden Expense	\$25.6	\$+0.9
Total Maintenance Expense	\$62.4	\$+3.9
(Exhibit F, Sheet 45: \$62.1 + \$0.3 = \$62.4)		

CALCULATION DETAILS FOR CHAPTER VDOMESTIC DIVISION, 1962

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
(Millions)	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$20.5

+\$1.3

This \$20.5 million expense (Exhibit F, Sheet 46: \$20.4 + \$0.1 = \$20.5) was estimated in connection with operating 90.4 million plane-miles (Exhibit F, Sheet 46: 89.9 + 0.5 = 90.4). We estimate the 5.7 million plane-miles net increase mentioned on page 70 (11.6 - 5.9 = 5.7) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$20.5 \times \frac{5.7}{90.4} = \$1.3 \text{ million increase}$$

- B. Communications personnel, communications purchased, light, heat, power and water, other services-associated companies, shop and servicing supplies, stationery, printing and office supplies, other uncleared expense credits and various miscellaneous expenses (Exhibit F, Sheet 46)

\$ 3.3

NC

Total Aircraft Servicing Expense

\$23.8

+\$1.3

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare and taxes-payroll

\$10.0

+\$0.6

This \$10.0 million expense (Exhibit F, Sheet 46: \$9.9 + \$0.1 = \$10.0) was estimated in connection with operating 88.4 million plane-miles (Exhibit F, Sheet 46: 87.9 + 0.5 = 88.4). We estimate the net additional 5.7 million plane-miles mentioned on page 70 (11.6 - 5.9 = 5.7) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$10.0 \times \frac{5.7}{88.4} = \$0.6 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 24 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter V
B. Passenger food expense, other supplies, insurance-traffic liability and other services-outside	\$12.4	\$+1.0
<p>This \$12.4 million expense (Exhibit F, Sheet 47: \$12.3 + \$0.1 = \$12.4) was estimated in connection with \$275.0 million of passenger traffic revenue (Exhibit F, Sheet 47: \$273.0 + \$2.0 = \$275.0). We estimate the \$21.5 million increase in revenue from passenger traffic mentioned on page 70 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:</p> $\$12.4 \times \frac{\$21.5}{\$275.0} = \$1.0 \text{ million increase}$		
C. Trainees and instructors, rentals, interrupted trips expense and various miscellaneous expenses (Exhibit F, Sheet 47)	\$ 0.7	NC
Total Passenger Service Expense	\$23.1	\$+1.6

TRAFFIC SERVICING EXPENSE

A. General aircraft and traffic handling personnel, passenger handling personnel, cargo handling personnel, insurance-employee welfare, injuries, loss and damage, taxes-payroll, other services-outside, rentals and other supplies	\$20.2	\$+1.5
<p>This \$20.2 million expense (Exhibit F, Sheet 47: \$20.1 + \$0.1 = \$20.2) was estimated in connection with \$300.6 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$22.6 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$20.2 \times \frac{\$22.6}{\$300.6} = \$1.5 \text{ million increase}$		
B. Other personnel, personnel expenses, trainees and instructors, communications purchased, light, heat, power and water, other services-associated companies, stationery, printing and office supplies, insurance-traffic liability, other expenses and various miscellaneous expenses (Exhibit F, Sheet 47)	\$ 1.6	NC
Total Traffic Servicing Expense	\$21.8	\$+1.5

CALCULATION DETAILS FOR CHAPTER VDOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter V
<u>SERVICING ADMINISTRATION EXPENSE</u>		
Total Servicing Administration Expense	\$ 2.4	\$+0.1
<p>This \$2.4 million expense (Exhibit F, Sheet 48: \$2.4 + NC = \$2.4) was estimated in connection with Aircraft Servicing and Traffic Servicing expense of \$23.8 and \$21.8 million respectively (shown previously). We estimate the addition in Aircraft and Traffic Servicing expenses of \$1.3 and \$1.5 million respectively (shown previously) would have been accompanied by a proportionate increase in the Servicing Administration expense. The calculation is:</p> $\$2.4 \times \frac{(\$1.3 + \$1.5)}{(\$23.8 + \$21.8)} = \$0.1 \text{ million increase}$		
Total Servicing Administration Expense	\$ 2.4	\$+0.1
<u>PROMOTION AND SALES EXPENSE</u>		
Reservations and Sales		
A. General aircraft and traffic handling personnel, passenger handling personnel, recordkeeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, tariffs, schedules and timetables, other expenses, insurance-employee welfare and taxes-payroll		
	\$23.6	\$+1.8
<p>This \$23.6 million expense (Exhibit F, Sheet 48: \$23.4 + \$0.2 = \$23.6) was estimated in connection with \$300.6 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$22.6 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:</p> $\$23.6 \times \frac{\$22.6}{\$300.6} = \$1.8 \text{ million increase}$		
B. Communications personnel, general management personnel, light, heat, power and water, other services-outsides, stationery, printing and office supplies, trainees and instructors, other supplies and various miscellaneous expenses		
	\$ 2.4	NC
Total Reservations and Sales Expense	\$26.0	\$+1.8

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TWA Ex. 4(c)(4), Exhibit J, page 26 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1962

Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter V
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Advertising and Publicity

- A. Other personnel, advertising, tariffs, schedules and timetables

\$ 8.3

\$+0.6

This \$8.3 million expense (Exhibit F, Sheet 49: \$8.2 + \$0.1 = \$8.3) was estimated in connection with \$300.6 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$22.6 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$8.3 \times \frac{\$22.6}{\$300.6} = \$0.6 \text{ million increase}$$

- B. Personnel expenses, other promotional and publicity expenses, rentals and various miscellaneous expenses (Exhibit F, Sheet 49)

\$ 0.7

NC

Total Advertising and Publicity Expense

\$ 9.0

\$+0.6

Total Promotion and Sales Expense

\$35.0

\$+2.4

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Recordkeeping and statistical personnel, purchasing personnel, other personnel, personnel expenses, uncollectible accounts, rentals, stationery, printing and office supplies, other expenses, insurance-employee welfare and taxes-payroll

\$ 7.6'

\$+0.6

This \$7.6 million expense (Exhibit F, Sheet 49: \$7.5 + \$0.1 = \$7.6) was estimated in connection with \$300.6 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$22.6 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$7.6 \times \frac{\$22.6}{\$300.6} = \$0.6 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 27 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1962

	Actual Expense With Revisions of Chapters I and II <u>(Millions)</u>	Estimated Change In Expense, For Chapter V <u>(Millions)</u>
B. General management personnel, communications purchased, professional and technical fees and expenses, other services-outside, other supplies, memberships, corporate and fiscal expenses, taxes-other than payroll, insurance purchased-general, other uncleared expense credits, legal fees and expenses and various miscellaneous expenses (Exhibit F, Sheet 50)	\$ 4.2	NC
Total General and Administrative Expense	\$11.8	\$+0.6
<u>DEPRECIATION AND AMORTIZATION EXPENSE</u>		
For flight equipment, expendable spare parts obsolescence, ground property and equipment, and amortization of developmental and pre-operating expenses (Exhibit F, Sheet 50: \$45.1 + \$0.8 = \$45.9)	\$45.9	\$+5.4

Note: These figures were furnished by Price Waterhouse & Co.

<u>TOTAL OPERATING EXPENSE</u>	<u>\$309.3</u>	<u>\$+21.0</u>
(Exhibit F, Sheet 50: \$306.7 + \$2.6 = \$309.3)		

TWA Ex. 4(c)(4), Exhibit J, page 28 of 36
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
(Millions)	

FLYING OPERATIONS EXPENSE

For CV 880 Jet Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, insurance-employee welfare and various miscellaneous expenses

\$21.5	\$+7.7
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This \$21.5 million expense was incurred for operating CV 880 aircraft 26.4 million plane-miles (Exhibit J, Sheet 1). We estimate the additional 9.4 million plane-miles mentioned on page 67 would have been accompanied by a proportionate increase in this expense. The calculation is:

$$\$21.5 \times \frac{9.4}{26.4} = \$7.7 \text{ million increase}$$

- B. Insurance purchased-general

\$ 1.1	\$+0.4
--------	--------

This \$1.1 million expense was incurred for hull insurance for 22.1 CV 880 aircraft available for commercial service. We estimate the additional 7.9 aircraft available mentioned on page 66 would have been accompanied by a proportionate increase in this expense. The calculation is:

$$\$1.1 \times \frac{7.9}{22.1} = \$0.4 \text{ million increase}$$

Total CV 880 Flying Operations Expense

\$22.6	\$+8.1
--------	--------

For L-1049G Piston Aircraft

- A. Pilots and copilots, other flight personnel, trainees and instructors, personnel expenses, aircraft fuels, aircraft oils, taxes-other than payroll, insurance-employee welfare, taxes-payroll and various miscellaneous expenses

\$ 9.5	\$-5.0
--------	--------

This \$9.5 million expense (Exhibit F, Sheet 57: \$9.7 - \$0.2 = \$9.5) was estimated for operating L-1049G aircraft 9.2 million plane-miles (Exhibit F, Sheet 57: 9.4 - 0.2 = 9.2). We estimate the reduction of 4.8 million plane-miles mentioned on page 70 would have been accompanied by a proportionate reduction in this kind of expense. The calculation is:

$$\$9.5 \times \frac{4.8}{9.2} = \$5.0 \text{ million decrease}$$

TWA Ex. 4(c)(4), Exhibit J, page 29 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

	Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter V
B. Insurance purchased-general	#	NC
Total L-1049G Flying Operations Expense	\$ 9.5,	\$-5.0
For Other Aircraft and Generally Nonrevenue	\$56.2	NC
Total Flying Operations Expense (Exhibit F, Sheet 58: \$87.9 + \$0.4 = \$88.3)	\$88.3	\$+3.1

MAINTENANCE EXPENSE

Direct Maintenance Expense

For CV 880 Jet Aircraft Flight Equipment	\$ 7.9	\$+2.8
--	--------	--------

This \$7.9 million expense was incurred for operating CV 880 aircraft 26.4 million plane-miles (Exhibit J, Sheet 1). We estimate the additional 9.4 million plane-miles mentioned on page 67 would have been accompanied by a proportionate increase in this expense. The calculation is:

$$\$7.9 \times \frac{9.4}{26.4} = \$2.8 \text{ million increase}$$

For L-1049G Piston Aircraft Flight Equipment	\$ 4.8	\$-2.5
--	--------	--------

This \$4.8 million expense (Exhibit F, Sheet 58: \$4.9 - \$0.1 = \$4.8) was estimated for operating L-1049G aircraft 9.2 million plane-miles (Exhibit F, Sheet 58: 9.4 - 0.2 = 9.2). We estimate the reduction of 4.8 million plane-miles mentioned on page 70 would have been accompanied by a proportionate reduction in this kind of expense. The calculation:

$$\$4.8 \times \frac{4.8}{9.2} = \$2.5 \text{ million decrease}$$

For Other Aircraft and Generally Nonrevenue	\$15.8	NC
For General Ground Property and Equipment	\$ 2.0	NC
Total Direct Maintenance Expense	\$30.5	\$+0.3

This symbol is used to designate an amount too small to be significant in these estimates which are rounded to the nearest \$0.1 million.

TWA Ex. 4(c)(4), Exhibit J, page 30 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

	Actual Expense With Revisions of Chapters I and II (M i l l i o n s)	Estimated Change In Expense, For Chapter V
Applied Maintenance Burden Expense For CV 880 Jet Aircraft Flight Equipment	\$ 4.1	\$+1.5
<p>This \$4.1 million CV 880 Applied Maintenance Burden expense was incurred in connection with the \$7.9 million Direct Maintenance expense shown above. We estimate the \$2.8 million increase in the CV 880 Direct Maintenance expense shown above would have been accompanied by a proportionate increase in Applied Maintenance Burden expense. The calculation is:</p> $\$4.1 \times \frac{\$2.8}{\$7.9} = \$1.5 \text{ million increase}$		
For L-1049G Piston Aircraft Flight Equipment	\$ 3.4	\$-1.8
<p>This \$3.4 million expense (Exhibit F, Sheet 59: \$3.5 - \$0.1 = \$3.4) was estimated in connection with the \$4.8 million L-1049G Direct Maintenance expense shown above. We estimate the \$2.5 million reduction in Direct Maintenance expense shown above would have been accompanied by a proportionate reduction in this Applied Maintenance Burden expense. The calculation is:</p> $\$3.4 \times \frac{\$2.5}{\$4.8} = \$1.8 \text{ million decrease}$		
For Other Aircraft and Generally Nonrevenue	\$14.2	NC
For General Ground Property and Equipment	\$ 2.2	NC
Total Applied Maintenance Burden Expense	\$23.9	\$-0.3
Total Maintenance Expense (Exhibit F, Sheet 59: \$54.2 + \$0.2 = \$54.4)	\$54.4	---

CALCULATION DETAILS FOR CHAPTER VDOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
(Millions)	

AIRCRAFT SERVICING EXPENSE

- A. General aircraft and traffic handling personnel, aircraft control personnel, trainees and instructors, personnel expenses, other services-outside, rentals, landing fees, other supplies, insurance-employee welfare and taxes-payroll

\$23.3

+\$1.1

This \$23.3 million expense (Exhibit F, Sheet 60: \$23.2 + \$0.1 = \$23.3) was estimated in connection with operating 100.1 million plane-miles (Exhibit F, Sheet 60: 99.6 + 0.5 = 100.1). We estimate the 4.6 million plane-miles net increase mentioned on page 70 (9.4 - 4.8 = 4.6) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$23.3 \times \frac{4.6}{100.1} = \$1.1 \text{ million increase}$$

- B. Communications personnel, communications purchased, light, heat, power and water, shop and servicing supplies, stationery, printing and office supplies, other unclaimed expense credits and various miscellaneous expenses (Exhibit F, Sheet 60)

\$ 3.3

NC

Total Aircraft Servicing Expense

\$26.6

+\$1.1

PASSENGER SERVICE EXPENSE

- A. Other flight personnel, other personnel, personnel expenses, insurance-employee welfare, taxes-payroll and rentals

\$11.6

+\$0.5

This \$11.6 million expense (Exhibit F, Sheet 60: \$11.5 + \$0.1 = \$11.6) was estimated in connection with operating 98.0 million plane-miles (Exhibit F, Sheet 60: 97.5 + 0.5 = 98.0). We estimate the net additional 4.6 million plane-miles mentioned on page 70 (9.4 - 4.8 = 4.6) would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$11.6 \times \frac{4.6}{98.0} = \$0.5 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 32 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapters I and II (Millions)	Estimated Change In Expense, For Chapter V
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- B. Passenger food expense, other supplies,
insurance-traffic liability and other
services-outside

\$14.9

\$+0.9

This \$14.9 million expense (Exhibit F, Sheet 61: \$14.8 + \$0.1 = \$14.9) was estimated in connection with passenger traffic revenue of \$313.7 million (Exhibit F, Sheet 61: \$311.8 + \$1.9 = \$313.7). We estimate the \$18.2 million increase in revenue from passenger traffic mentioned on page 70 would have been accompanied by a proportionate increase in this Group B expense. The calculation is:

$$\$14.9 \times \frac{\$18.2}{\$313.7} = \$0.9 \text{ million increase}$$

- C. Trainees and instructors, interrupted
trips expense and various miscellaneous
expenses (Exhibit F, Sheet 61)

\$ 0.5

NC

Total Passenger Service Expense

\$27.0

\$+1.4

TRAFFIC SERVICING EXPENSE

- A. General aircraft and traffic handling
personnel, passenger handling personnel,
cargo handling personnel, insurance-
employee welfare, injuries, loss and
damage, taxes-payroll, other services-
outside, rentals and other supplies

\$22.6

\$+1.3

This \$22.6 million expense (Exhibit F, Sheet 61: \$22.5 + \$0.1 = \$22.6) was estimated in connection with \$343.5 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$19.1 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$22.6 \times \frac{\$19.1}{\$343.5} = \$1.3 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 33 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

	Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
	(Millions)	
B. Communications personnel, other personnel, personnel expenses, communications purchased, light, heat, power and water, stationery, printing and office supplies, insurance-traffic liability, other expenses and various miscellaneous expenses (Exhibit F, Sheet 61)	\$ 1.7	NC
Total Traffic Servicing Expense	<u>\$24.3</u>	<u>\$+1.3</u>
<u>SERVICING ADMINISTRATION EXPENSE</u>		
Total Servicing Administration Expense	<u>\$ 2.9</u>	<u>\$+0.1</u>
<p>This \$2.9 million expense (Exhibit F, Sheet 62) was estimated in connection with Aircraft Servicing and Traffic Servicing expenses of \$26.6 and \$24.3 million respectively (shown previously). We estimate the increase in Aircraft and Traffic Servicing expenses of \$1.1 and \$1.3 million respectively (shown previously) would have been accompanied by a proportionate increase in Servicing Administration expense. The calculation is:</p> $\$2.9 \times \left(\frac{\$1.1 + \$1.3}{\$26.6 + \$24.3} \right) = \$0.1 \text{ million increase}$		
Total Servicing Administration Expense	<u>\$ 2.9</u>	<u>\$+0.1</u>

TWA Ex. 4(c)(4), Exhibit J, page 34 of 36
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
(M i l l i o n s)	

PROMOTION AND SALES EXPENSE

Reservations and Sales

- A. General aircraft and traffic handling personnel, passenger handling personnel, recordkeeping and statistical personnel, traffic solicitors, other personnel, personnel expenses, commissions-passenger, communications purchased, commissions-property, rentals, tariffs, schedules and timetables, other expenses, insurance-employee welfare and taxes-payroll

\$27.9

\$+1.6

This \$27.9 million expense (Exhibit F, Sheet 62: \$27.7 + \$0.2 = \$27.9) was estimated in connection with \$343.5 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$19.1 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$27.9 \times \frac{\$19.1}{\$343.5} = \$1.6 \text{ million increase}$$

- B. Communications personnel, general management personnel, light, heat, power and water, other services-outside, stationery, printing and office supplies, trainees and instructors, other supplies and various miscellaneous expenses (Exhibit F, Sheet 62)

\$ 2.6

NC

Total Reservations and Sales Expense

\$30.5

\$+1.6

Advertising and Publicity

- A. Other personnel, advertising and tariffs, schedules and timetables

\$10.9

\$+0.6

This \$10.9 million expense (Exhibit F, Sheet 63: \$10.8 + \$0.1 = \$10.9) was estimated in connection with \$343.5 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$19.1 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$10.9 \times \frac{\$19.1}{\$343.5} = \$0.6 \text{ million increase}$$

TWA Ex. 4(c)(4), Exhibit J, page 35 of 36
(Exhibits B-J to C. & C. Report-
Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

	Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
	(Millions)	
B. Personnel expenses, other promotional and publicity expenses, rentals and various miscellaneous expenses (Exhibit F, Sheet 63)	\$ 0.7	NC
Total Advertising and Publicity Expense	\$11.6	\$+0.6
Total Promotion and Sales Expense	\$42.1	\$+2.2

GENERAL AND ADMINISTRATIVE EXPENSE

- A. Recordkeeping and statistical personnel,
purchasing personnel, other personnel,
personnel expenses, uncollectible accounts,
rentals, stationery, printing and office
supplies, other expenses, insurance-
employee welfare and taxes-payroll

\$ 8.5 \$+0.5

This \$8.5 million expense (Exhibit F, Sheet 63) was estimated in connection with \$343.5 million simulated transportation revenue (Exhibit J, Sheet 1). We estimate the \$19.1 million increase in total revenue mentioned on page 71 would have been accompanied by a proportionate increase in this Group A expense. The calculation is:

$$\$8.5 \times \frac{\$19.1}{\$343.5} = \$0.5 \text{ million increase}$$

- B. General management personnel, communica-
tions purchased, light, heat, power and
water, professional and technical fees and
expenses, other services-outside, other
supplies, memberships, corporate and fiscal
expenses, taxes-other than payroll, insur-
ance purchased-general, other uncleared
expense credits, legal fees and expenses
and various miscellaneous expenses
(Exhibit F, Sheet 64)

\$ 4.4 NC

Total General and Administrative Expense

\$12.9 \$+0.5

TWA Ex. 4(c)(4), Exhibit J, page 36 of 36
 (Exhibits B-J to C. & C. Report-
 Financial Results from Reconstructed Jet Fleet)

CALCULATION DETAILS FOR CHAPTER V

DOMESTIC DIVISION, 1963

Actual Expense With Revisions of Chapters I and II	Estimated Change In Expense, For Chapter V
<u>(Millions)</u>	

DEPRECIATION AND AMORTIZATION EXPENSE

For flight equipment, expendable spare parts
 obsolescence, ground property and equipment,
 and amortization of developmental and pre-
 operating expense (Exhibit F, Sheet 64:

\$40.1 + \$0.6 = \$40.7)

\$ 40.7

\$ +4.4

Note: These figures were furnished by Price Waterhouse & Co.

TOTAL OPERATING EXPENSE

(Exhibit F, Sheet 64: \$317.3 + \$1.9 = \$319.2)

\$319.2

\$+14.1